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NEW GENERA AND NEW SPECIES OF LACEBUGS FROM THE EASTERN HEMISPHERE (HEMIPTERA: TINGIDAE)

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The present paper characterizes 4 new genera and 27 new species of the Tingidae from the Eastern Hemisphere. Also, three described species are transferred to other genera (new combinations) and an overlooked case of specific homonymy is corrected. Unless stated otherwise in the descriptions, the types of the new species are in the Drake Collection, U.S. National Museum (USNM).

In specific references no punctuation is used between the trivial name and that of the author in the original references to species, whereas a comma is inserted between these names in all other references. The structural measurements in the descriptions are such that 80 units equal one millimeter.

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Subfamily Cantacaderinae Stål

Genus *Gonycentrum* Bergroth

Gonycentrum Bergroth, Wiener Ent. Zeit., vol. 17, No. 1, p. 9, 1898.

Gonycentrum afrum, new species

FIGURE 1

DESCRIPTION: Small, elongate ovate, grayish testaceous with veinlets variegated with brown, head grayish brown, antennae brownish testaceous with terminal segment blackish fuscous, legs testaceous, femora widely banded at middle with dark fuscous, tarsi infusate, body beneath brownish fuscous. Length 2.55 mm., width (across widest part of elytra) 1.00 mm.

Head very long, greatly produced in front of eyes, surpassing second antennal segment, armed with nine tuberclelike spines; eyes rather small, transverse, touching anterior margin of pronotum; bucculae very wide, six areolae deep in widest part, parallel, open in front, with apices extending slightly beyond tip of clypeus. Antennae 1.62 mm. long, very slender, indistinctly pubescent, with the pubescent hairs pale and longer on last segment; segmental measurements: I, 6; II, 5; III, 54; IV, 20. Labium extending to end of sulcus, the bucculae and labial laminae on thoracic sterna parallel, together forming a long, straight, narrow channel, with both ends open. Hypocostal laminae composed of one row of small areolae.

Pronotum moderately convex across humeri, reticulately punctate, tricarinate; median carina extending entire length of pronotum, very distinct, without cells, present on collar; lateral carinae parallel, terminating anteriorly at calli, also without cells; paranota narrow, uniseriate, nearly upright, each paranotum composed of one row of small cells; posterior margin slightly sinuate, not extending over scutellum, the latter small and dark.

Elytra widest across apices of clavus, with adventitious veins in both subcostal and discoidal areas, with sutural areas overlapping so as to lie jointly rounded behind in repose; costal area narrow, composed of one row of small areolae; subcostal area much wider, five or six areolae deep. Legs moderately long, indistinctly pubescent.

TYPES: Holotype (male) and allotype (female), Grahamstown, South Africa, collected by Dr. E. M. Callan, USNM 65109.

REMARKS: The holotype of *G. afrum* is illustrated in figure 1. The slender, elongate-ovate form with elytra slowly convexly narrowed beyond the middle and the narrower costal areas separate this species from its African congeners.

Gonycentrum engistum, new species

FIGURE 2

DESCRIPTION: Small, obovate, brachypterous, stramineous brown, with head dark brownish fuscous, calli black, marks on pronotum and elytra fuscous and located as shown in figure 2; antennae dark brown, with fourth segment black; legs brownish with some fuscous; body beneath dark blackish fuscous. Length (brachypterous female) 2.80 mm., width 1.25 mm.

Head broad, punctate, with two pairs of short, stout, blunt, testaceous spines in front of eyes; bucculae wide, long, areolate, with apices scarcely meeting in front. Antennae moderately long, third segment sparsely clothed with pale setal hairs, fourth segment moderately clavate, with pale pubescent hairs; segmental measurements: I, 12; II, 6; III, 56; IV, 16. Antenniferous tubercles pale, rounded in front, concave within. Labium long, brownish, extending a little beyond metasternum; sternal laminae of rostral sulcus wide, whitish testaceous, wider and biseriate on metasternum, open behind. Legs rather short, sparsely provided with pale setalike pubescence. Metathoracic scent glands without distinct orifice on each metapleuron. Hypocostal lamina narrow, uniseriate.

Pronotum depressed, reticulately punctate, unicarinate; calli deeply impressed, impunctate; median carina raised, uniseriate, the areolae small, becoming indistinct posteriorly; lateral carinae absent; collum broad, finely reticulate; paranota narrow, mostly uniseriate, biseriate opposite calli; posterior margin subangulate. Scutellum small, not concealed.

Elytra strongly convex, meeting in a straight line behind scutellum; costal area narrow, uniseriate; subcostal area wide, sloping convexly downward, six or seven areolae deep opposite base of discoidal area; discoidal and claval areas united and not clearly separable from each other, nearly two-thirds as long as elytra, six to seven areolae deep in greater part, with apical border obtusely angulate, apex of basal angle located near the inner boundary. Boundary veins separating discoidal (including clavus) and subcostal areas and between sutural and subcostal areas distinctly raised. Male and macropterous form unknown.

TYPE: Holotype (brachypterous female), Mount Lamington, New Guinea, May 1937, USNM 65110.

REMARKS: The holotype of *G. engistum* is illustrated in figure 2. The unicarinate pronotum and shorter discoidal areas separate at once this species from other members of the genus described from the East Indies and Australian Region.

Gonycentrum socium, new species

FIGURE 3

DESCRIPTION: Small, obovate, stramineous brown, with head and patches of fuscous on pronotum and elytra as depicted in figure 3; bucculae fuscous, with inferior margin testaceous; body beneath blackish fuscous. Labium brown, with laminae of sternal sulcus pale testaceous. Antennae fuscous-brown, the fourth segment black. Legs brownish testaceous, tips of tarsi dark fuscous. Length 2.40 mm.; width of male 1.20 mm., of female 1.45 mm.

Head long, broad, subdepressed, punctate, armed with two pairs of moderately long, suberect, stout, blunt spines in front of eyes; eyes moderately large, widely separated from each other; antenniferous tubercles short, concave within, with front margin rounded; bucculae wide, long, open in front, uniseriate in front, then becoming wider and biseriate posteriorly. Antennae slender, smooth, with first two segments short, moderately incrassate, apices of second segment not attaining tip of head; segmental measurements: I, 10; II, 6; III, 52; IV, 14. Legs rather short, femora only slightly incrassate. Hypocostal lamina narrow, uniseriate.

Pronotum depressed, reticulately punctate, with hind margin subrounded, tricarinate; all carinae long, percurrent, uniseriate; lateral carinae parallel, less elevated than median carina, interrupted behind collar; calli impressed, impunctate; paranota narrow, turned obliquely upward, mostly uniseriate, biseriate opposite calli.

Elytra distinctly convex, much wider in female than male, with clavus and discoidal areas completely fused; boundary vein separating discoidal, subcostal, and sutural areas distinctly raised; boundary vein delimiting costal and subcostal areas poorly developed; costal area narrow, mostly uniseriate, biseriate in apical third; subcostal area wide, sloping gently convexly downward, wider than discoidal area, usually with one or two, raised, transverse adventitious veins; discoidal area very long, about six-sevenths as long as elytra, with two or three adventitious cross veins, mostly five or six areolae deep. Scutellum small, exposed. Macropterous form unknown. Ostiole and ostiolar sulcus of metathoracic scent glands indistinct.

TYPES: Holotype (male), allotype (female), and male and female paratypes (from Hacker collection), Launceston, Tasmania, Australia, May 5, 1925, USNM 65111.

REMARKS: The allotype of *G. socium* is illustrated in figure 3. This species resembles *G. tinsdalei* Hacker of Australia in general aspect, and can be separated from it by shorter antennae and the narrower paranota and costal areas. In *tinsdalei* the costal area is

entirely biseriate. The tricarinate pronotum separates *socium* from the species described above.

Genus *Ulmus* Distant

Ulmus Distant, Trans. South African Phil. Soc., vol. 14, p. 425, 1904.

Ulmus engaeus, new species

FIGURE 4

DESCRIPTION: Small, rather broadly ovate, elytra strongly convex, brownish testaceous, with dark fuscous marks as depicted in figure 4; body beneath dark fuscous, with lateral sides blackish. Legs brownish testaceous, with femora brownish fuscous. Antennae brownish testaceous, first two segments brown, fourth segment black. Length 2.60 mm., width (elytra) 1.50 mm.

Head long, longly produced in front of eyes, grayish fuscous with spines testaceous, armed with six spines, the occipital pair absent; bucculae long, wide, areolate, extending anteriorly beyond apex of clypeus, open in front; antenniferous processes small, rounded in front, concave within. Antennae long, very slender, shortly thinly pubescent; segmental measurements: I, 12; II, 7; III, 60; IV, 16. Labium long, brownish with dark apex, extending a little beyond base of rostral sulcus; sternal laminae of sulcus areolate, ends not meeting behind. Hypocostal laminae wide, long, areolate. Metathoracic scent glands with ostiole and a narrow, long, obliquely upright (slightly tilted backward) ostiolar sulcus on each metapleuron. Legs moderately long, moderately slender, with femora slightly thickened.

Pronotum depressed, areolate, unicarinate; median carina percurrent, foliaceous, mostly uniseriate, biseriate in highest part, without indication of lateral carinae; calli blackish, impunctate; collar long, raised anteriorly, composed of three, transverse rows of areolae; paranota wide, with outer margin sinuate, widest near middle, toothed at lateroposterior angle; hind margin of pronotum truncate. Scutellum small, visible.

Elytra in repose distinctly ovate, very little longer than abdomen (brachypterous), costal area moderately wide, horizontal, biseriate; subcostal area very wide, mostly six areolae deep, sloping obliquely downward, with two to four, transverse, adventitious veins; clavus and discoidal areas fused, not clearly separable from each other, with two or three raised, oblique, traverse, adventitious veins, the discoidal part extending backward considerably beyond middle of elytra. Hind pair of wings wanting. Macropterous form unknown.

Types: Holotype (male), allotype (female), and paratype (female), all brachypterous, Kasango, Kivu Province, Congo, October 9, 1954, USNM 65112.

REMARKS: The allotype of *U. engaeus* is illustrated in figure 4. The species differs from *U. testudineatus* Distant of South Africa in having shorter antennae, wider paranota with outer margin strongly sinuate, and the discoidal and claval areas fused. *U. testudineatus* is a smoother and more evenly reticulated species without adventitious veins in subcostal and discoidal areas.

Genus *Phatnoma* Fieber

Phatnoma Fieber, Entomologische monographien, p. 57, 1844.

Phatnoma agviates, new species

FIGURE 5

DESCRIPTION: Large, brownish stramineous, with a few veinlets in elytra infusate; head grayish brown, punctate, the cephalic spines brown with dark apices; bucculae, sternal laminae of rostral sulcus, sternum, and thoracic pleura testaceous; abdomen beneath brownish; labium brownish with tip blackish. Antennae with two basal segments brown, other segments missing. Length 4.00 mm., width (elytra) 2.10 mm.

Head punctate, very long, longly extended in front of eyes, armed with seven, stout, very long, nearly upright spines (occipital, preocular, and frontal pairs, plus median spines between frontal and preocular pairs); bucculae very long, rather narrow, biseriate in front, wider and three or four areolae deep behind, extended forward beyond apex of clypeus, closed in front. Legs moderately long, slender, the femora very little thickened. Antennae with first two segments short, only slightly swollen, apices of second segments not attaining tip of head, other two segments missing. Metathoracic scent glands with ostiole and ostiolar canal on each metapleuron. Hypocostal lamina long, composed of one row of moderately large areolae.

Pronotum wide, moderately convex across humeral angles, coarsely roundly punctate, unicarinate; median carina rather thick, uniseriate, with a large, erect spine at the center of the collar, without trace of lateral carinae; collar small, areolate; paranota wide, only feebly raised, outer margin biangulate (fig. 5); posterior margin nearly truncate. Scutellum small, exposed.

Elytra wide, much wider and much longer than abdomen; costal area wide, widest in front, slowly narrowed posteriorly; subcostal area wide, sloping downward with surface slightly concavely depressed with two or three, transverse, adventitious veins; discoidal area long,

with outer boundary vein arcuate, extending considerably beyond middle of elytra; claval area distinct, areolation and shape of areas as in figure 5. Macropterous form unknown.

TYPE: Holotype (male), Bougainville, Solomon Islands, July 1954, USNM 65113.

REMARKS: The holotype of *P. agviates* is illustrated in figure 5. This species can be distinguished at once from other members of the genus in the Old World by the unicarinate pronotum and the long, erect spine on the disc of the collum. *Platnoma varians unicarinata* Drake of South America is the only other member of the genus with unicarinate pronotum. The typical form of *variens* has a tricarinate pronotum.

Subfamily Tinginae Stål

Genus *Dictyla* Stål

Dictyla Stål, Vetensk.-Akad. Forh. Stockholm, vol. 3, p. 57, 1874.

Dictyla flavipes (Signoret)

FIGURE 6

Monanthia flavipes Signoret, Ann. Soc. Ent. France, ser. 3, vol. 8, p. 956, 1861.

This species was described from Madagascar and so far is known only from there. The type and two paratypes, all mounted on the same rectangular card, are in the Naturhistorisches Museum, Vienna. Other specimens from Madagascar have also been seen. A paratype is illustrated in figure 6.

Dictyla cheriani (Drake)

FIGURE 7

Monanthia cheriani Drake, Bombay Nat. Hist. Soc., vol. 39, p. 145, 1936.

Originally described from specimens netted on *Cordia* sp., Combatore, India. Several other nymphs and adults are at hand from Pilani (Rajasthan), India, collected by R. Kumar. The color is pale testaceous with brownish or fuscous markings as shown in figure 7.

Genus *Physatocheila* Fieber

Physatocheila Fieber, Entomologische monographien, p. 80, 1844.

Physatocheila aglaia, new species

FIGURE 8

DESCRIPTION: Moderately large, elongate ovate, brownish testaceous, without markings, body beneath brown. Length 3.80 mm., width (across widest part of elytra) 1.45 mm.

Head black, very short, armed with five brownish spines; hind pair very long, appressed, reaching to base of antennae; median spine shortest, porrect; front pair longer than median, porrect, with tips touching; bucculae wide, areolate, ends contiguous in front. Labium brown, almost reaching to base of metasternum; laminae uniseriate, parallel on mesosternum, more widely separately and subcordate on metasternum, with ends forming a wide, V-shaped opening behind. Antennae moderately long, moderately stout, brown with last segment tending to be a little darker, indistinctly pubescent; segmental measurements: I, 12; II, 10; III, 84; IV, 30. Orifice of metathoracic scent glands with a pale, upright channel on each metapleuron. Legs slender, brown, indistinctly pubescent.

Pronotum slightly transversely convex across humeral angles, mostly concealed by large, reflexed paranota, tricarinate; lateral carinae visible on posterior process, parallel, without areolae; median carina extending entire length of pronotum, not higher than lateral pair; collar slightly elevated at middle so as to form a small, tectiform hood; paranota extending to median carina, completely reflexed.

Elytra much longer than abdomen, widest across apex of hind pronotal process, strongly narrowed on apical fourth; costal area moderately wide, composed of two rows of areolae as far as apex of discoidal area, thence with only a single row of larger cells; subcostal area biseriate, strongly obliquely sloping downward, with cells smaller than in costal area; discoidal area long, about three-fourths the length of elytra, with outer boundary vein slightly arcuate, acutely angulate at both base and apex, widest opposite apex of hind process of pronotum, there seven or eight areolae deep, on same horizontal plane as discoidal area, with areolae on basal part smaller and same size as those in discoidal area, thence a little larger.

TYPE: Holotype (male), Mandalay, Burma, August 10, 1914, USNM 65114.

REMARKS: The holotype of *P. aglaia* is illustrated in figure 8. The species is narrower and paler than *P. exolesca* Drake of India but with much wider paranota and slightly thinner and longer antennae. In *P. exolesca* the reflexed paranota do not entirely cover the lateral carinae, and the rostral laminae are not as widely separated and are parallel on both mesosternum and metasternum.

Physatocheila enalla, new species

DESCRIPTION: Moderately large, obovate, brown with head and last antennal segment blackish; transverse band near middle of costal area (including cells) and most of discoidal and sutural areas dark brown; paranota at humeral angles dark fuscous. Body beneath brown. Length 3.40 mm., width 1.40 mm.

Head short, armed with five, short, appressed, brownish testaceous spines; bucculae broad, areolate, with ends meeting in front. Antennae with very short, golden pubescence; segmental measurements: I, 13; II, 11; III, 68; IV, 28. Labium extending nearly to base of metasternum; laminae pale, uniseriate, parallel on mesosternum, slightly more widely separated on metasternum, with ends forming a wide V-shaped angle behind. Orifice of metathoracic scent glands with an upright channel on each metapleuron. Hypocostal laminae uniseriate. Legs moderately long, moderately stout, indistinctly pubescent.

Pronotum moderately convex across humeral angles, coarsely punctate, tricarinate; carinae rather thick, moderately raised, each carina composed of a single row of cells, the lateral carinae slightly converging anteriorly; paranota fairly large, reflexed, with outer margins almost touching median carina and resting largely on pronotal surface, feebly raised at humeral angles; hood small, tectiform, extending backward between calli.

Elytra a little longer than abdomen, discoidal areas overlapping, with apices jointly rounded in repose, costal area composed of one row of moderately large, clear cells, biseriate in transverse band, there cells smaller and infusate; subcostal area almost vertical, biseriate, the cells smaller than in costal area; discoidal area large, about two-thirds as long as the elytra, with outer boundary vein arcuate, acutely angulate at base and apex, widest near middle, there seven or eight cells deep; sutural area on same horizontal level as discoidal area, the cells becoming a little larger in distal third.

TYPE: Holotype (female), Mandalay, Burma, August 12, 1914, USNM 65115.

REMARKS: This species is separated from *P. aglaia*, new species, by its much shorter and broader form, shorter antennae, shorter legs, almost entirely uniseriate costal area (biseriate only in transverse band), and much narrower paranota. *P. exolasca* Drake is a much larger species with basal two-thirds of costal area biseriate and the costal area having an extremely wide transverse brown band.

Physatocheila lautana, new species

DESCRIPTION: Moderately large, oblong. Pronotum black with collar, hood, paranota, and entire posterior process brown; head black with tips of spines brownish; elytra brownish with premedian band and apical part (both cells and veins) blackish brown or dark fuscous; body beneath black, shining; antennae brown; legs brown with femora and tips of tarsi dusky brown. Dorsal surface sparsely clothed with short, flakelike, golden pubescence; antennae and legs moderately furnished with very short, golden pubescence; body beneath with very short

grayish-golden pubescence. Length 3.40 mm.; width at widest part of elytra 1.20 mm., across humeral angles 1.00 mm.

Head very short, armed with five moderately long, appressed spines; bucculae mostly biseriate, with ends contiguous in front, not surpassing apex of head. Antennae moderately stout; segmental measurements: I, 10; II, 10; III, 90; IV, wanting. Labium reaching onto metasternum; laminae foliaceous, uniseriate, cordate with ends behind not quite meeting on metasternum. Legs moderately long, femora very little swollen.

Pronotum moderately convex, punctate on disc, reticulate on posterior process, moderately narrowed anteriorly, tricarinate. The carinae quite distinct, without cells; median carina long, slightly higher than lateral pair; lateral carinae strongly convexly constricted on disc, terminating in front at calli; paranota long, wide, reflexed, resting flatly against pronotal surface, not extending to lateral carinae, six areolae deep in widest part; hood small, inflated, pyriform, truncate in front, extending backward between calli. Metathoracic scent glands with orifice and upright channel on each metapleuron. Hypocostal laminae uniseriate.

Elytra widest across costal band, there wider than width across humeri of pronotum, convexly constricted on sides beyond middle, with sutural areas overlapping and jointly rounded behind; costal area moderately wide, biseriate on basal three-fifths, thence narrower and uniseriate, the cells (except in darkened areas) hyaline; subcostal area narrower than costal area, nearly vertical, biseriate; discoidal area large, two-thirds as long as elytra, with outer boundary vein slightly sinuate, acutely angulate at base and apex, widest at middle, there eight cells deep; sutural area on same horizontal plane as discoidal area, the areolae slightly larger in distal half. Metathoracic wings nearly as long as elytra, slightly embrowned.

TYPE: Holotype (male), Laut Island, Macassar Strait, near Borneo, USNM 65116.

REMARKS: This species is separated from other members of the genus described above by the black head and disc of pronotum, widely convexly separated lateral carinae on pronotal disc, and the short, flakelike, golden pubescence.

Genus *Perissonemia* Drake and Poor

Perissonemia Drake and Poor, Philippine Journ. Sci., vol. 62, No. 1, p. 2, 1937.

Perissonemia sandakana, new species

FIGURE 9

DESCRIPTION: Small, oblong, dark brownish fuscous, dorsal surface with patches of niveous excretions as depicted in figure 9; body beneath

reddish fuscous. Antennae brownish, with first two segments black fuscous and fourth dark fuscous. Legs brown, with femora mostly dark fuscous and tips of tarsi dark. Length 2.90 mm., width 0.88 mm.

Head very short, slightly produced in front of eyes, armed with a pair of short, stout, blunt, occipital spines, other cephalic spines wanting; eyes large, transverse; antenniferous tubercles short, bluntly rounded in front, not spiniform. Antennae moderately long, inconspicuously pubescent, rather slender; segmental measurements: I, 18; II, 9; III, 76; IV, 38. Labium extending to base of mesosternum; buccal laminae wide, areolate, with ends meeting anteriorly; laminae of sternal sulcus not very broad, uniseriate, widely separated, parallel, closed behind by a transverse ridge. Ostiole and ostiolar canal of metathoracic scent glands with an upright sulcus on each metapleuron. Hypocostal lamina narrow, uniseriate.

Pronotum rather strongly convex across humeral angles, reticulately punctate, tricarinate; median carina very distinct, percurrent, with two or three small areolae between calli; lateral carinae distinct and parallel on hind pronotal process, less elevated and concave within on pronotal disc; calli deeply impressed, impunctate; collum wide, truncate in front; with transverse rows of areolae; paranota cariniform, slightly wider opposite calli.

Elytra parallel sided, extending beyond apex of abdomen; costal area very narrow, uniseriate, not clearly separated (except in wider part opposite apex of discoidal area) from subcostal area, with tiny areolae; subcostal area obliquely upright, mostly biserial; discoidal area extending a little beyond middle of elytra, acutely angulate at both base and apex, four areolae deep opposite apex of posterior process of pronotum; sutural area on same horizontal level as discoidal area, with areolae distinctly larger than in other elytral divisions. Hind pair of wings extending beyond apex of abdomen, densely clouded with dark fuscous.

TYPE: Holotype (male), Sandakan, Borneo, C. F. Baker, USNM 65117.

REMARKS: This species is most closely related to *P. illustris* Drake and Poor, but is readily separated from it by its shorter body, darker color, and distinctly narrower costal area. The lateral carinae are also fairly distinct on the pronotal disc. Both species are customarily found with snowy-white excretions (as depicted in fig. 9, the holotype).

Perissonemia occasa Drake

FIGURE 10

Perissonemia occasa Drake, Iowa State Coll. Journ. Sci., vol. 16, p. 2, 1942.—Takeya, Kurume Univ. Journ. (Nat. Sci.), vol. 4, p. 18, 1951.

This species is recorded from Japan and South China. A male from Japan is illustrated in figure 10.

Perissonemia kietana, new species

DESCRIPTION: Small, oblong, brownish, with veinlets of paranota and costal areas testaceous and of sutural areas mostly fuscous; areolae of paranota and costal areas hyaline; body beneath stramineous fuscous. Legs dusky brown, clothed with tiny, golden pubescence; antennae dark fuscous, clothed with tiny, golden pubescence on first three segments and with longer, grayish, pubescent hairs on fourth segment. Length 3.20 mm., width (elytra) 1.05 mm.

Head very short, slightly produced in front of eyes, strongly declivent, with a pair of short, frontal spines; eyes large, reddish fuscous; bucculae wide, areolate, closed in front; antenniferous tubercles short, bluntly rounded in front, not spinelike. Antennae moderately long, rather slender; segmental measurements: I, 14; II, 10; III, 88; IV, 48. Labium extending almost to base of mesosternum; laminae low, uniseriate, parallel on mesosternum, cordate with a V-shaped opening behind on metasternum. Metathoracic scent glands provided with an ostiole and upright ostiolar sulcus on each metapleuron. Hypocostal lamina moderately wide, uniseriate.

Pronotum moderately transversely convex, areolately punctate; median carina percurrent, composed of one row of small areolae (two deep between calli); lateral carinae less elevated, without areolae, distinct on posterior process of pronotum, becoming indistinct on pronotal disc; calli deeply impressed, impunctate; collum raised, areolate, subtectiform; paranota moderately wide, each composed of one row of moderately large areolae (two areolae deep opposite calli).

Elytra longer than abdomen, practically parallel sided; costal area moderately wide, composed of one row of fairly large, nearly quadrate areolae; subcostal area narrower than costal area, nearly upright, biseriate; discoidal area extending a little beyond middle of elytron, acutely angulate at both base and apex, widest opposite apex of hind process of pronotum, there four areolae deep; sutural area on same horizontal level as discoidal area, with areolae larger than in discoidal but not as large as in costal area. Hind wings longer than abdomen, clouded with dark fuscous.

TYPE: Holotype (male), Kieta, Solomon Islands, 1944, Dr. Logan Bennett, USNM 65118.

REMARKS: The wide costal area, less convex pronotum, and uniseriate median carina of pronotum separate this species from the species described below.

Perissonemia absita, new species

FIGURE 11

DESCRIPTION: Moderately large, oblong, brownish testaceous, with the veinlets of collum, paranota, and costal areas testaceous, the areolae hyaline and iridescent; body beneath dark stramineous; labium brown, with apex black; laminae of buccal and rostral sulci testaceous. Legs brownish testaceous, sparsely clothed with minute, golden, scalelike pubescence. Antennae brownish fuscous, with the first three segments sparsely clothed with minute, golden, flake-like pubescence, fourth segment with grayish pubescent hairs. Eyes large, reddish fuscous. Length 3.25 mm., width (elytra) 1.15 mm.

Head very short, slightly produced in front of eyes, blackish fuscous, armed with short brownish tuberclelike processes; bucculae widest behind, closed in front; labium reaching on to metasternum. Antenniferous tubercles short, rounded in front, not spiniform. Antennae long, slender; segmental measurements: I, 30; II, 20; III, 105; IV, 54. Hypocostal lamina uniseriate. Metathoracic scent glands with ostiole and upright sulcus on each metapleuron.

Pronotum moderately convex across humeri, reticulately punctate, tricarinate; median carina percurrent, slightly elevated, without distinct areolae (elevated and areolate between calli); lateral carinae less elevated, becoming indistinct anteriorly in front of middle of pronotal disc; collum raised, areolate, truncate in front, slightly produced posteriorly at middle; paranotum narrow, long, uniseriate, wider adjacent to calli, there with two extra areolae.

Elytra extending beyond apex of abdomen, slightly wider than humeral width; costal area fairly wide, composed of one row of large, quadrate or rectangular areolae; subcostal area sloping slowly downward, triseriate, the areolae small; discoidal area acutely angulate at both base and apex, widest behind middle, there five areolae deep; sutural area with areolae much larger than those in discoidal and subcostal areas, on same horizontal level as discoidal area. Hind wings shorter than elytra, clouded with fuscous.

TYPE: Holotype (male), Butuan, Mindanao, Philippines, C. F. Baker, USNM 65119.

REMARKS: The holotype of *P. absita* is illustrated in figure 11. The species is allied to *P. kietana*, new species, but is readily separated from it by the longer antennae, less elevated pronotal carinae (all pronotal carinae without areolae), and the triseriate subcostal area.

Genus *Ulonemia* Drake and Poor

Ulonemia Drake and Poor, Philippine Journ. Sci., vol. 62, No. 1, p. 3, 1937.

***Ulonemia plesia*, new species**

DESCRIPTION: Oblong ovate, brownish testaceous with pronotal disc pale brown, without elytral markings, abdomen beneath flavous-brown, and thoracic sterna dark ferrugineous. Antennae pale testaceous, with first two segments dark brown or ferrugineous and last segment mostly brown. Legs testaceous. Length 3.45 mm., width 1.25 mm.

Head very short, strongly declivent; eyes moderately large, reddish fuscous; occipital spines longer than median and frontal spines, subporrect, median spine erect and placed near middle of vertex; bucculae long, parallel, open in front, with a distinct tooth at inferoanterior angle, mostly biseriate, uniseriate posteriorly; antenniferous tubercles short, blunt, concave within, not spinelike. Antennae moderately long, slender, indistinctly pubescent; segmental measurements: I, 20; II, 9; III, 84; IV, 25. Labium extending slightly beyond middle of mesosternum; sternal laminae of rostral sulcus uniseriate, open behind. Hypocostal laminae narrow, uniseriate, areolae ovate. Metathoracic scent glands with ostiole and ostiolar sulcus on each metapleuron.

Pronotum moderately convex, coarsely punctate, each carina composed of one row of rather small, ovate areolae; lateral carinae slightly convergent anteriorly, slightly convex within on pronotal disc, all carinae equally raised; collar raised, with a small, pyriform hood; paranotum not very wide, uniseriate opposite humeri, thence anteriorly largely biseriate; calli deeply impressed, impunctate.

Elytra very little wider than abdomen, subequal in width to widest part of pronotum, sutural areas overlapping in repose; costal area not very wide, uniseriate, areolae small and ovate; subcostal area nearly erect, biseriate; discoidal area extending backward beyond middle of elytron, seven areolae deep in widest part; sutural area with larger areolae, on same horizontal level as discoidal area. Hind wings fully developed, dark fuscous.

TYPES: Holotype (female) and 4 female paratypes, Swan River, Western Australia, L. J. Newman (Hacker Collection), all macropterous, USNM 65120.

REMARKS: This species is slightly larger, but very similar in general aspect to *U. mjobergi* (Horváth). It differs from the latter in having wider paranota, wider costal areas of the elytra, and more elevated pronotal carinae. The areolae of these structures are hardly more than half as large as those in *mjobergi*.

Ulonemia mjobergi (Horváth)

FIGURE 12

Tingis (*Tingis*) *mjobergi* Horváth, Arkiv. Zool. Svenska Vetensk.-Akad., vol. 17, p. 5, 1925

This species, described from Western Australia (Freemantle and Broome) is known only from there. A paratype is illustrated in figure 12. The areolae of the lacy structures of the pronotum and costal area of the elytra are moderately large, clear, and mostly quadrate. The areolae are more neatly and orderly arranged than those of *U. plesia*.

Genus *Parada* Horváth

Parada Horváth, Ark. Zool. Svenska Vetensk.-Akad., vol. 17a, No. 24, p. 3, 1925.

***Parada solla*, new species**

DESCRIPTION: Moderately large, oblong, brown, with head dark grayish brown, eyes black, pronotal disc blackish fuscous, last antennal segment black, body beneath dark reddish brown, elytra with markings; sutural area with cells clouded with fuscous and the veinlets concolorous with rest of elytra. Legs testaceous brown. Length 3.52 mm., width 1.08 mm.

Head very short, feebly extended in front of eyes, armed with five, moderately long, stout spines, the hind pair appressed and three frontal spines porrect; bucculae wide, triseriate in widest part, with ends meeting in front. Labium brown, barely reaching to metasternum; laminae of labial sulcus not very wide, uniseriate, with ends not meeting behind. Antennae moderately stout, smooth; segmental measurements: I, 14; II, 10; III, 118; IV, 38. Metathoracic scent glands with ostiole and upright ostiolar sulcus on each metapleuron. Hypocostal lamina narrow, uniseriate.

Paranota strongly convex, finely punctate, tricarinate; hood moderately large, inflated, subcampanulate, feebly convex in front, extending backward beyond calli on anterior part of pronotal disc; paranota fairly wide, widest in front of middle, there four areolae deep, reflexed on pronotum; median carina raised, with one row of areolae on pronotal disc, less elevated and without areolae on posterior triangular process; lateral carinae divergent anteriorly, cariniform and without areolae on posterior process, thence anteriorly strongly foliaceous, completely reflexed, and three areolae deep in widest part, with outer margin convex but not in contact with median carina.

Elytra extending beyond apex of abdomen, greatest width scarcely wider than the pronotum at humeral angles, slightly constricted on sides beyond middle; costal area moderately wide, composed of one

row of quadrate areolae; subcostal area nearly upright, biseriate; discoidal area extending a little beyond middle of elytra, acutely angulate at both base and apex, five or six areolae deep in widest part just behind the middle; sutural area on same horizontal level as discoidal area, all areas sharply defined by prominent boundary veins. Hind wings nearly as long as elytra.

Types: Holotype (male) and allotype (female), Mount Spurgeon, Queensland, Australia, elevation 3,400–4,000 feet, July 28, 1922, Harvard University Expedition, P. J. Darlington, in Museum Comparative Zoology. Paratypes, 1 male, taken with holotype, and 1 male, Atherton Tableland, Lake Barrine, Queensland, April 18, 1932, P. J. Darlington.

REMARKS: This species resembles *P. taeniophora* Horváth from Queensland, but is readily distinguished from it by the wider, reflexed part of the lateral carinae and the uniseriate median carina on pronotal disc. The holotype (male) has the median carina more sharply elevated and arched at the middle of the pronotal disc than the paratypes.

Genus *Leptoypha* Stål

Leptoypha Stål, Svenska Vetensk.-Akad. Handl., vol. 11, No. 2, pp. 121 and 129, 1873.

Leptoypha luzona, new species

DESCRIPTION: Large, oblong, rusty red brown, with head blackish and eyes dark fuscous, sutural area of elytra with some veinlets dusky, otherwise without color markings on dorsal surface; body beneath blackish. Length 3.80 mm., width 1.35 mm.

Head very short, subdepressed above, strongly declivent, feebly produced in front of eyes; bucculae wide, closed in front, areolate; antenniferous processes short, blunt. Rostrum moderately long, reaching nearly to middle of mesosternum, brown, with black tip; rostral laminae uniseriate, moderately wide. Antennae rather stout, moderately long, clothed with short decumbent yellowish pubescence; segmental measurements: I, 20; II, 16; III, 78; IV, 28. Legs rather short, moderately stout, the femora slightly swollen. Metathoracic scent glands with ostiole and short ostiolar sulcus on each metapleuron.

Pronotum strongly convex, areolately punctate; median carina very distinct, without cells; lateral carinae poorly indicated; calli very little impressed, impunctate; collar areolate, truncate in front; paracosta narrow, cariniform, slightly wider opposite calli.

Elytra scarcely wider at widest point than width of pronotum across humeral angles, longer than abdomen; costal area very narrow, with basal three-fifths cariniform, thence posteriorly with one row of small, distinct areolae; subcostal area wide, mostly triseriate,

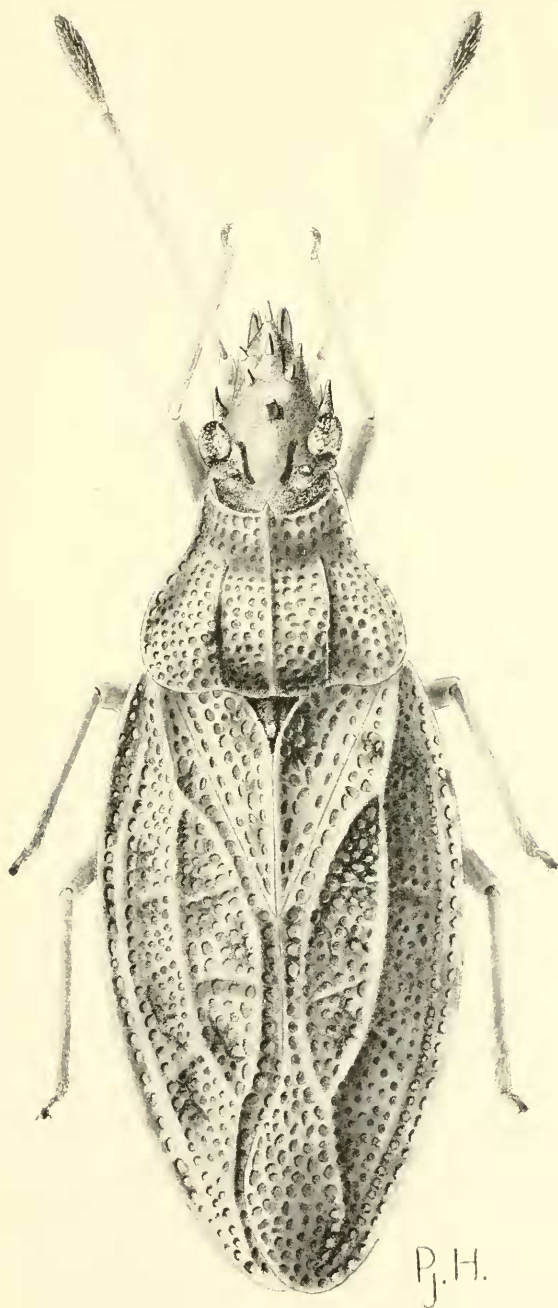


FIGURE 1.—*Gonycentrum afrum*, new species.

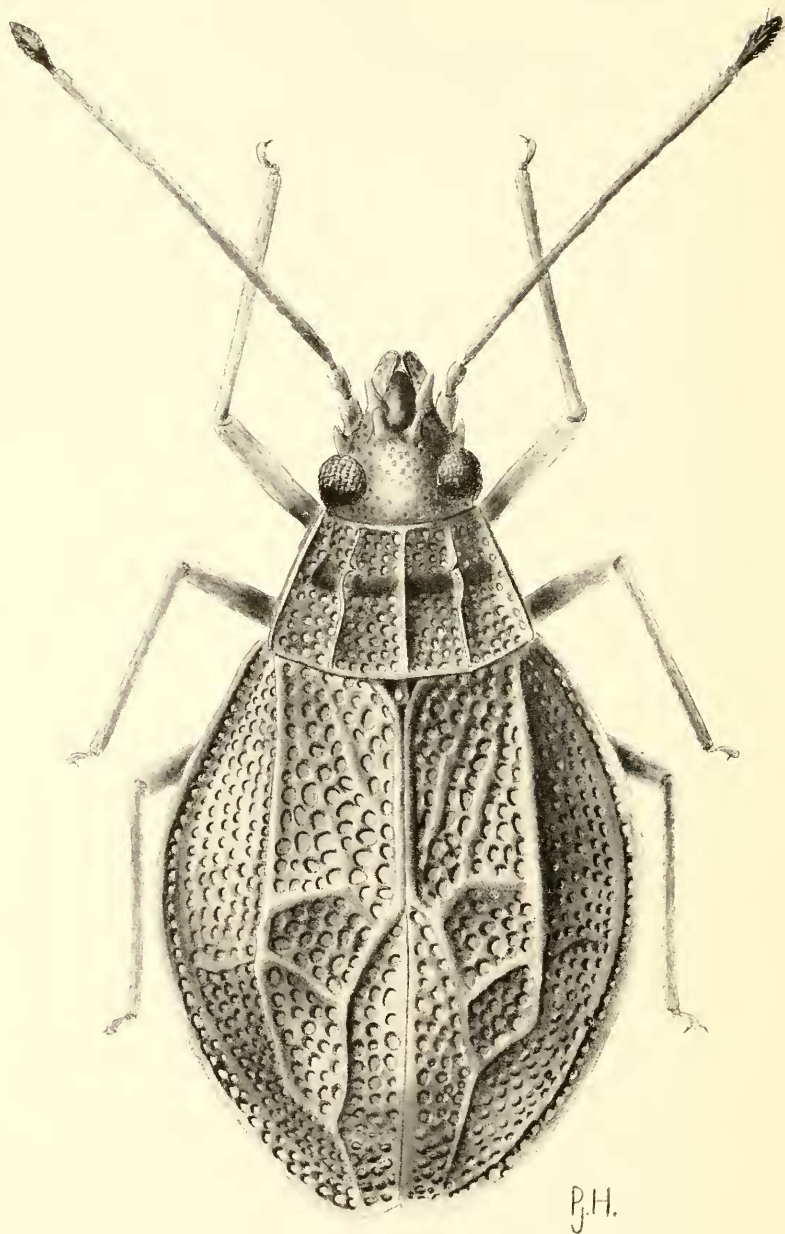
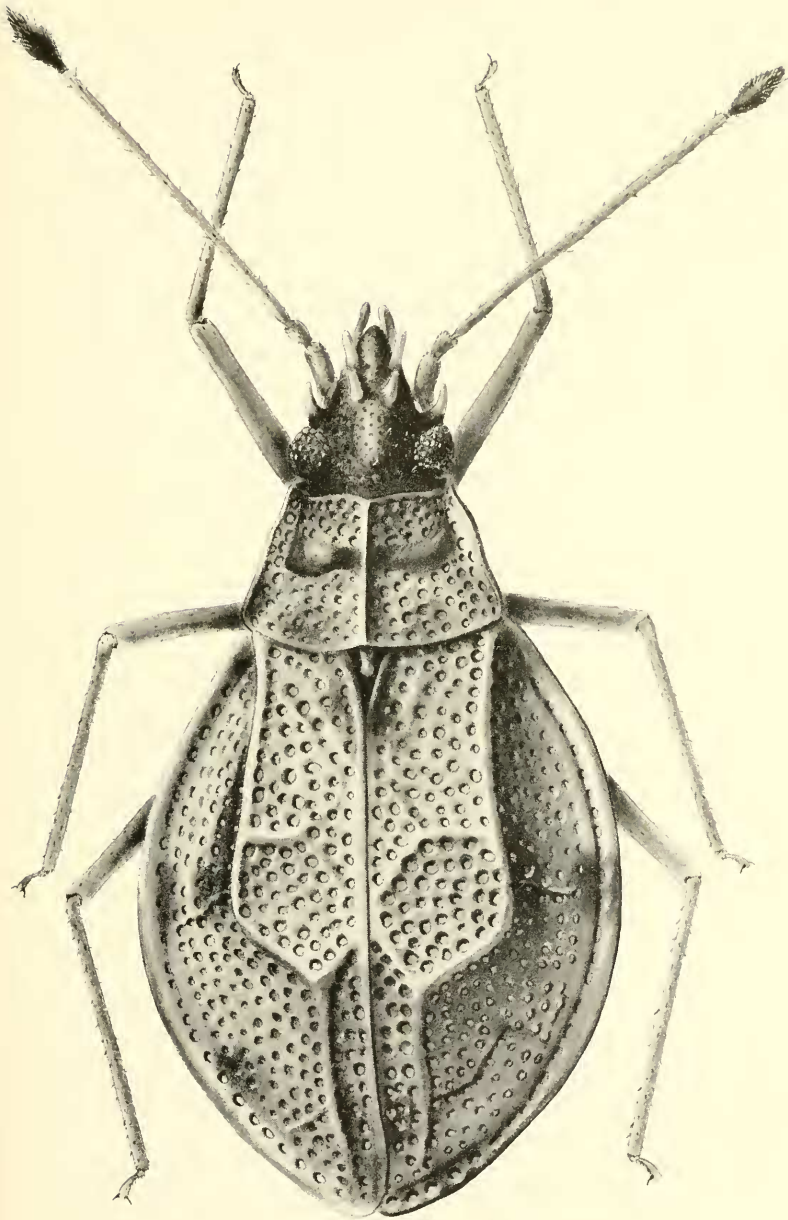


FIGURE 2.—*Gonycentrum engistum*, new species.



P.H.

FIGURE 3.—*Gonycentrum socium*, new species.

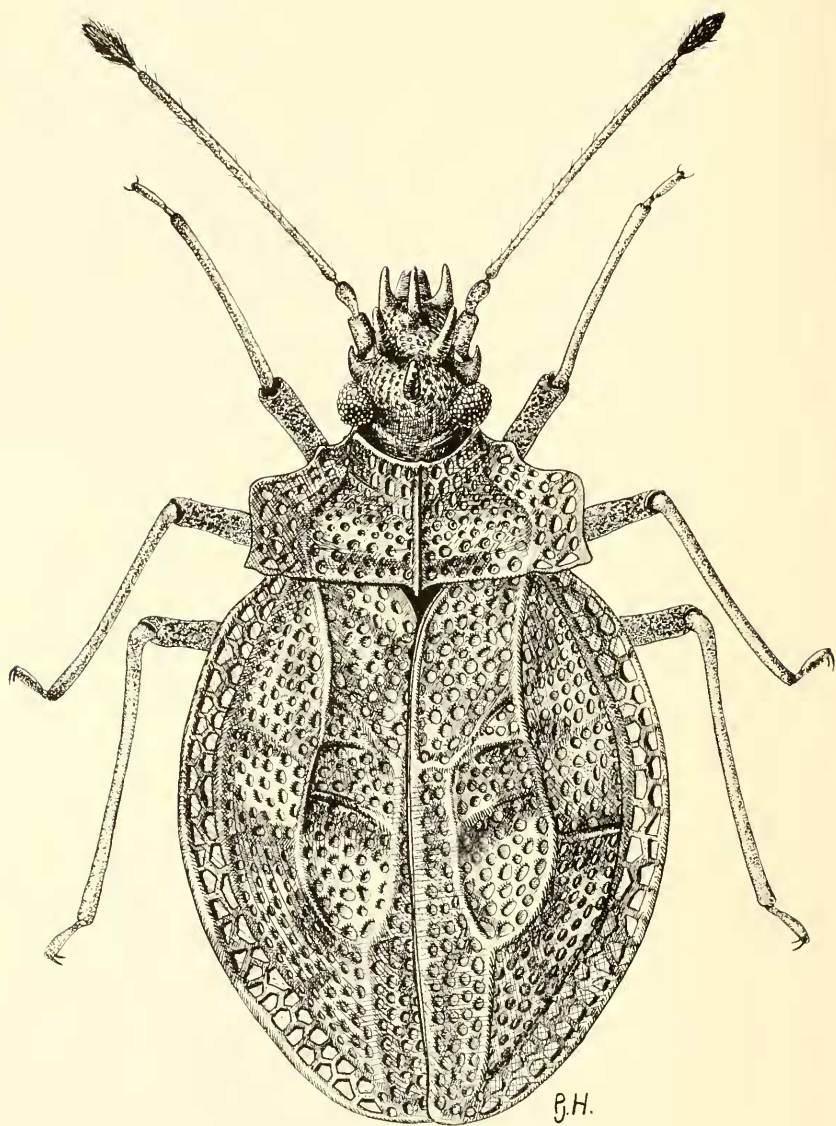


FIGURE 4.—*Ulmus engaeus*, new species.

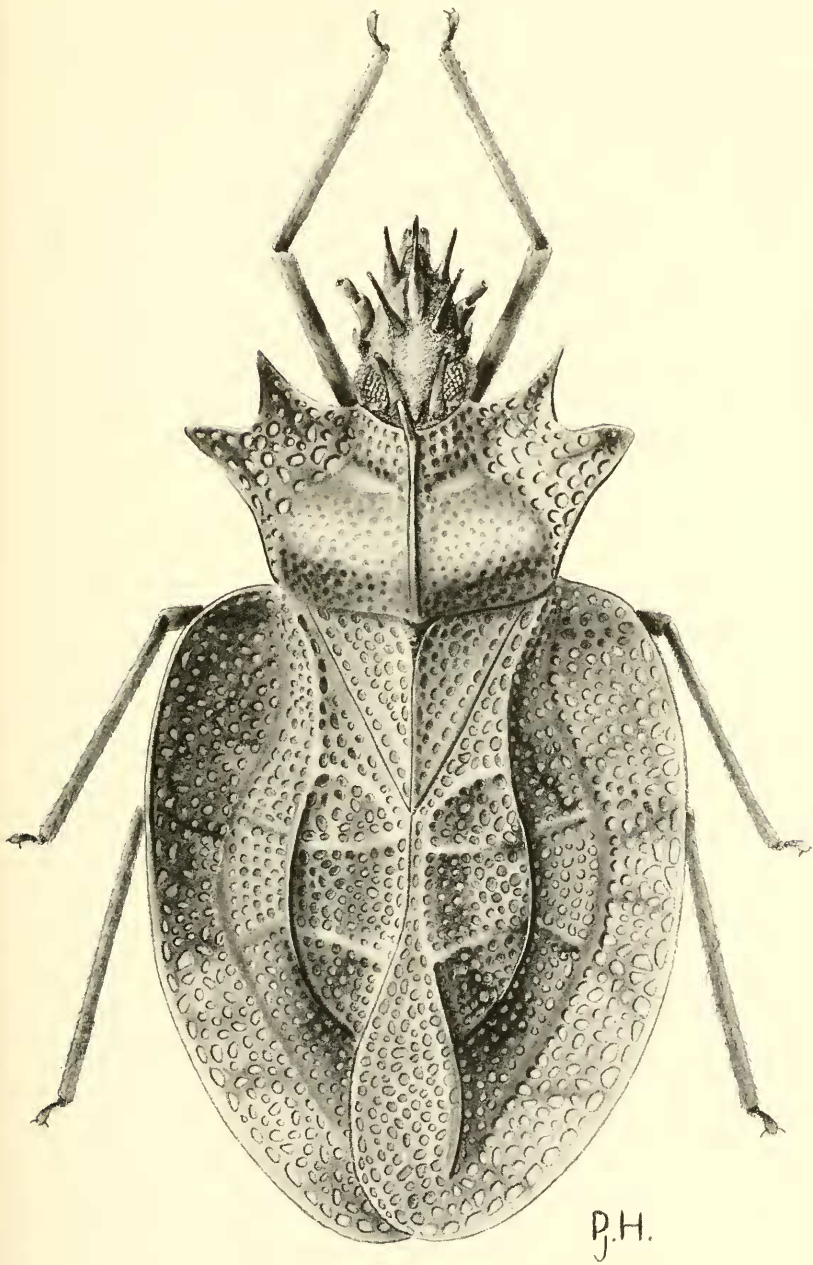


FIGURE 5.—*Phatnoma agviates*, new species.

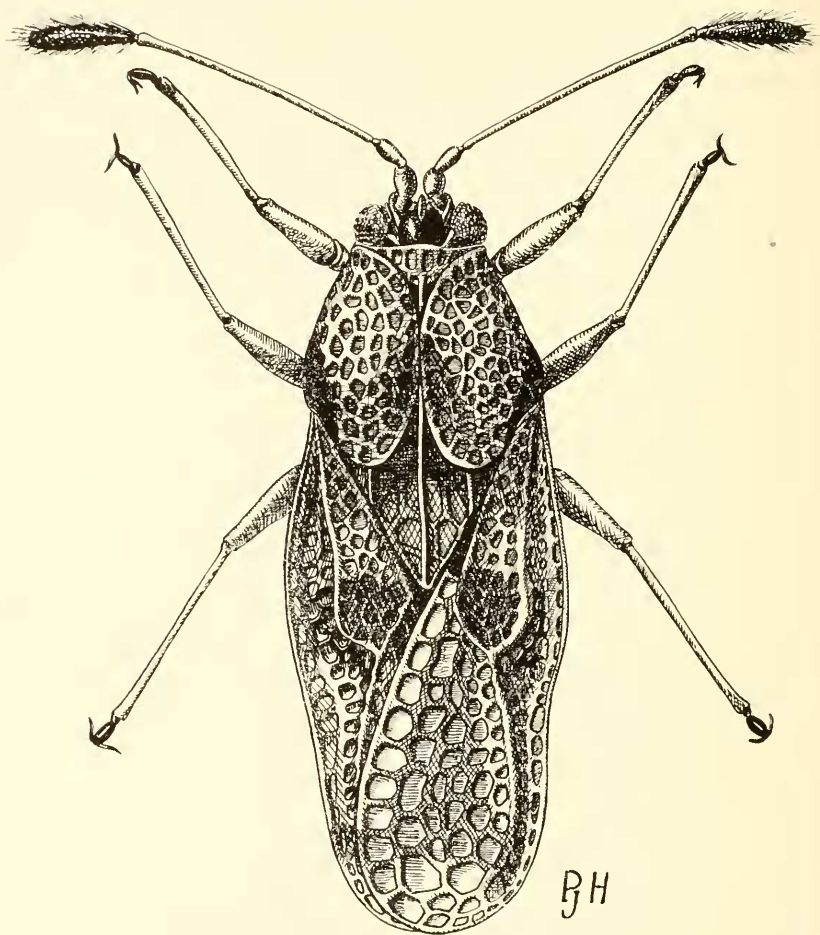


FIGURE 6.—*Dictyla flavipes* (Signoret).

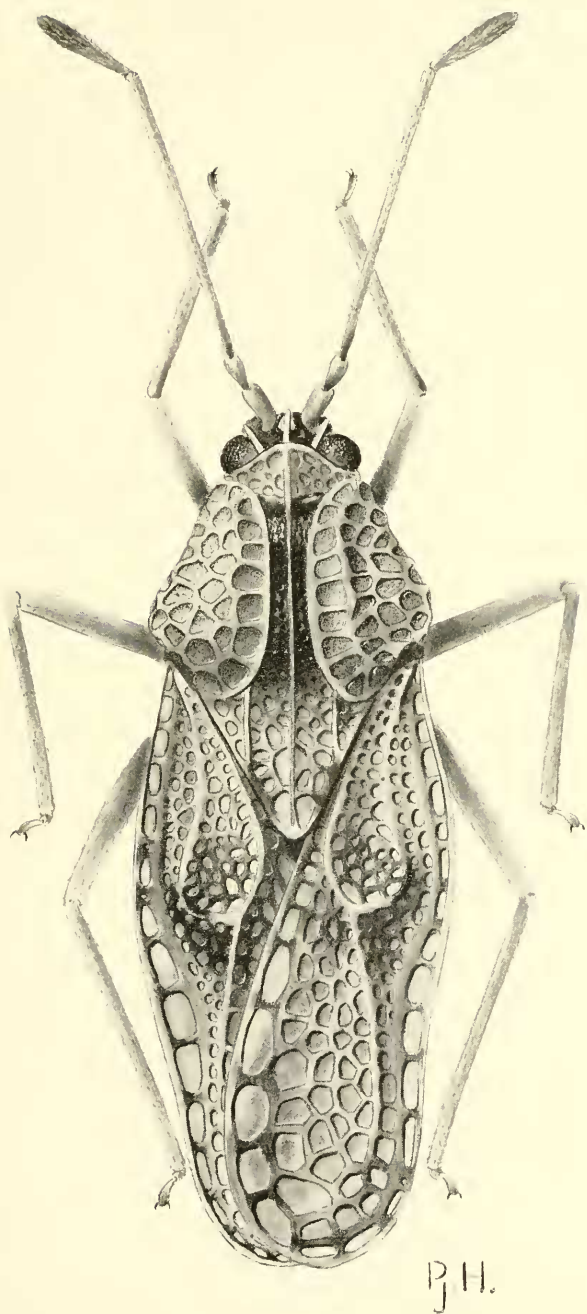


FIGURE 7.—*Dictyla cheriani* (Drake).

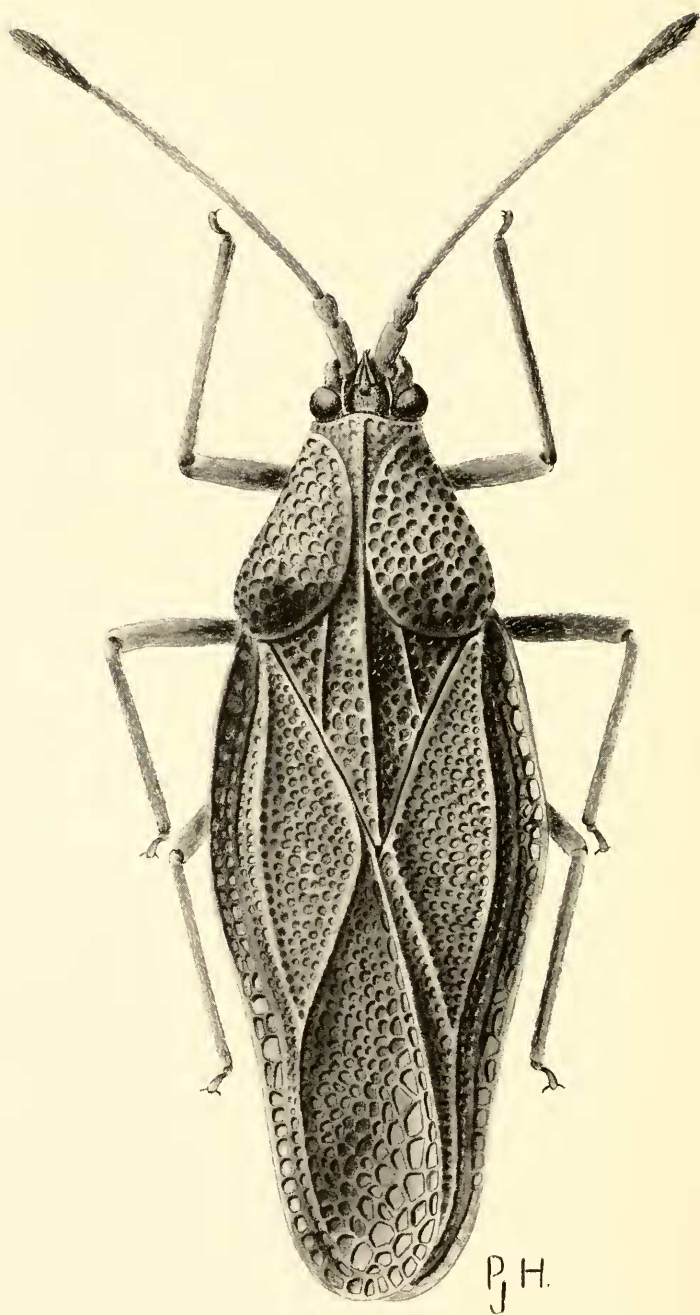


FIGURE 8.—*Physatocheila aglaia*, new species.



FIGURE 9.—*Perissonemia sandakana*, new species.

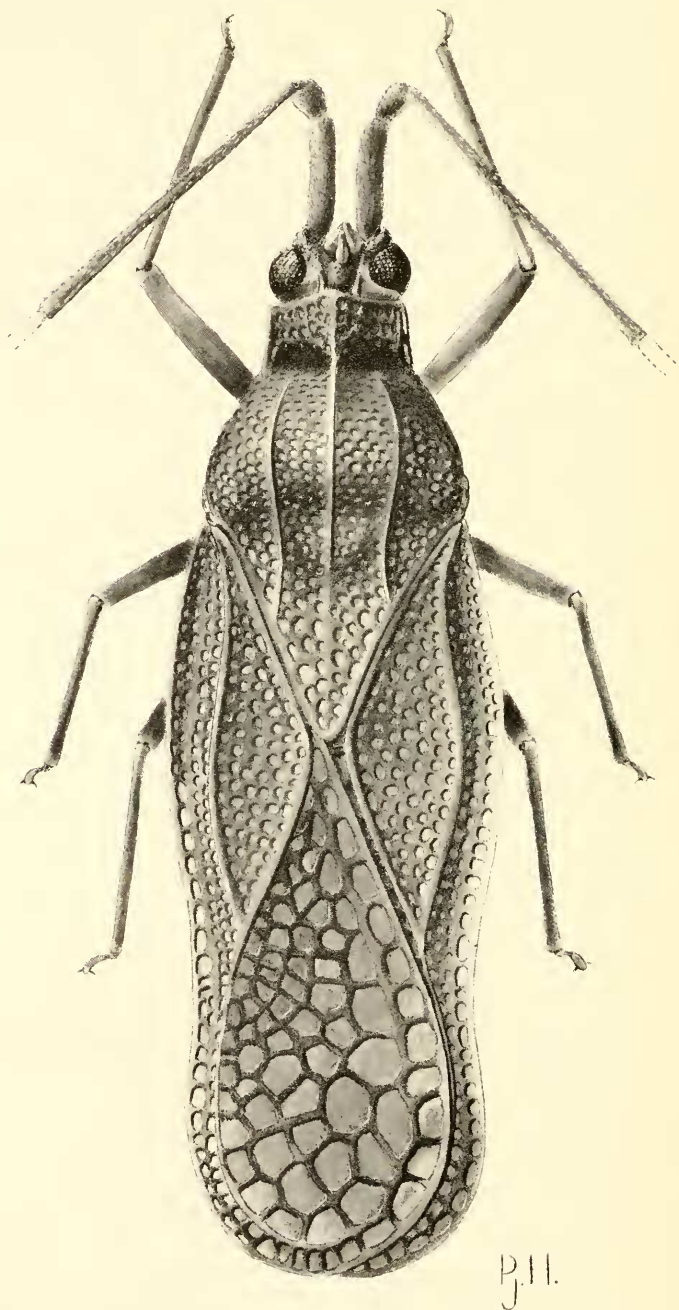


FIGURE 10.—*Perissonemia occasa* Drake.

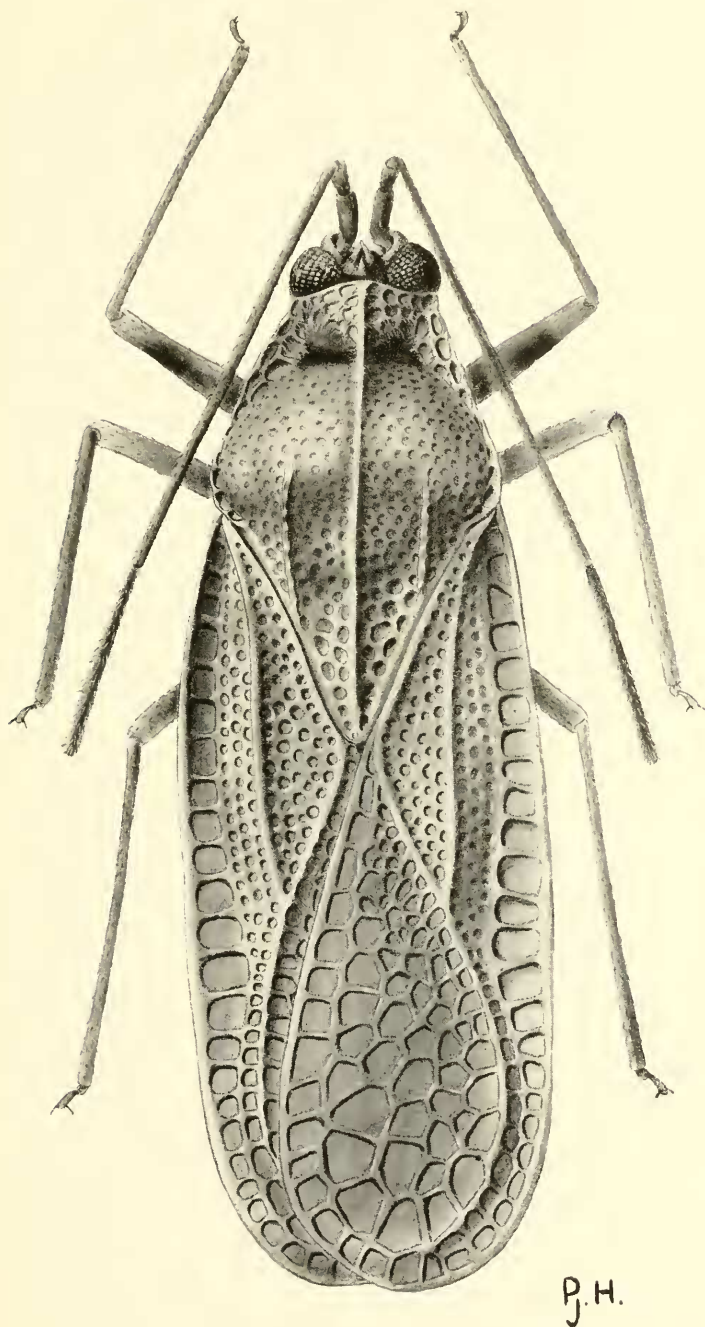


FIGURE 11.—*Perissonemia absita*, new species.

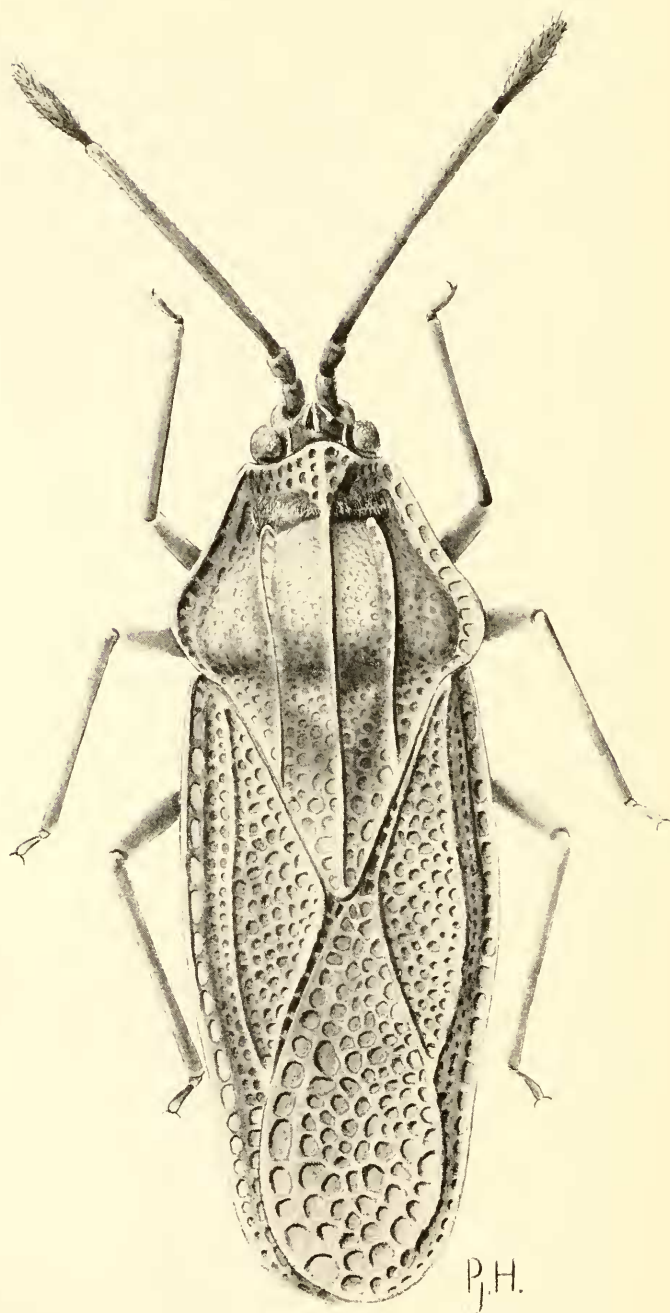
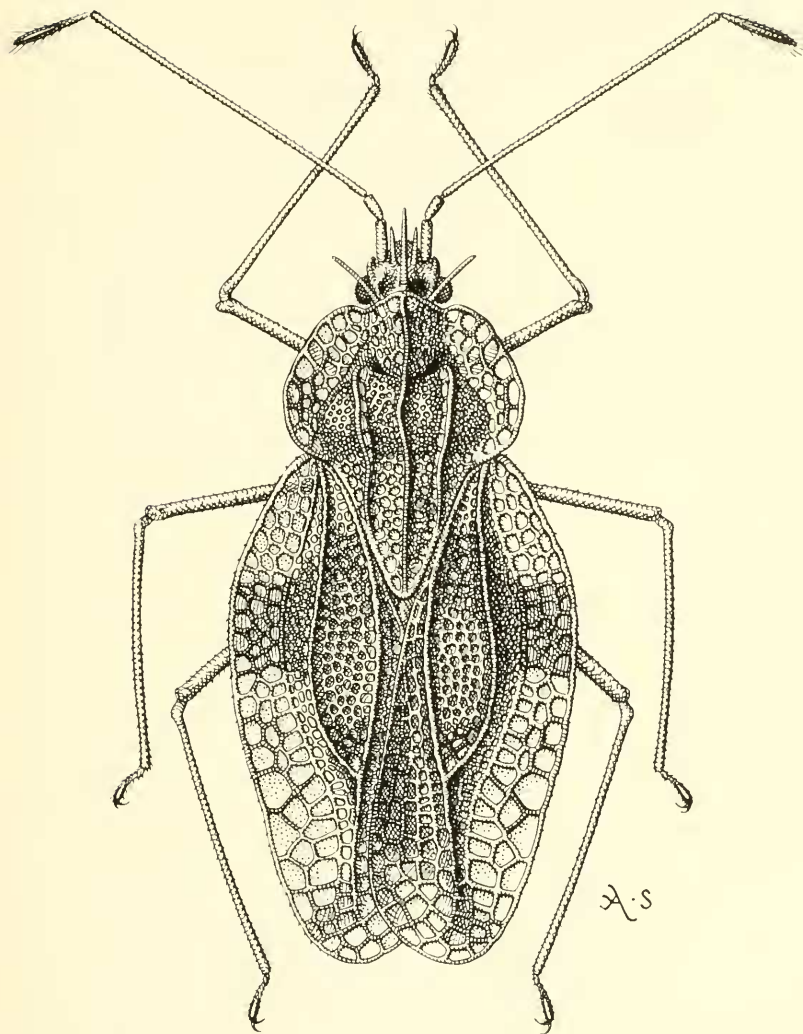


FIGURE 12.—*Ulonemia mjobergi* (Horváth).

FIGURE 13.—*Celantia vagans* Distant.

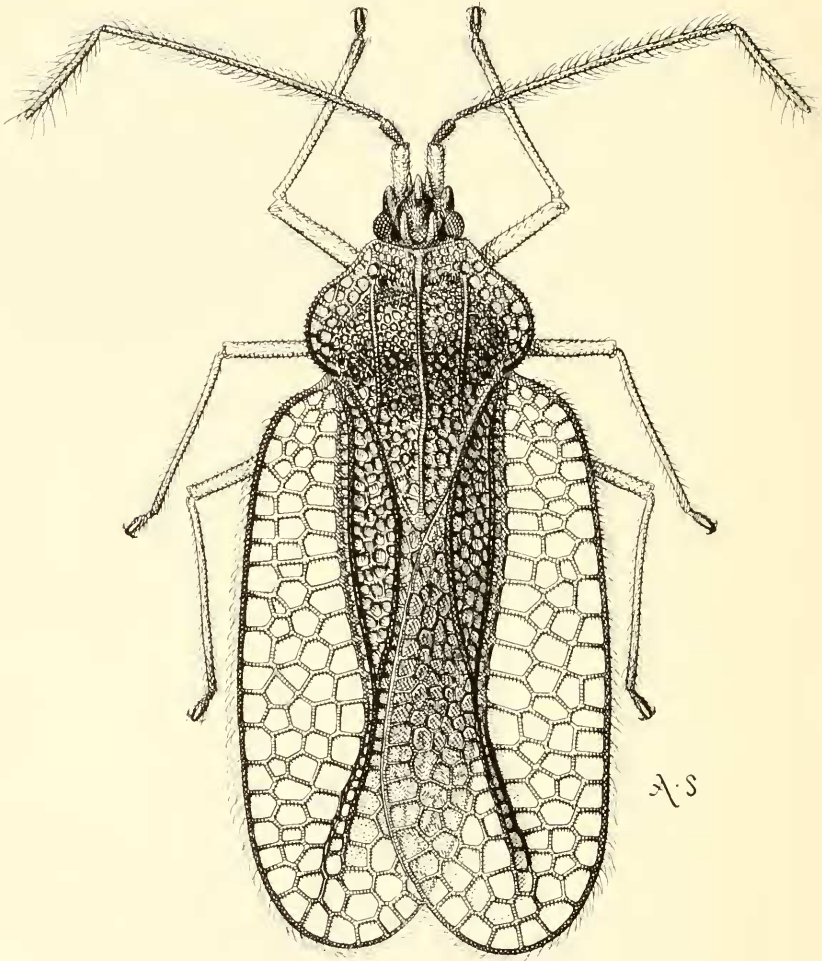


FIGURE 14.—*Cantinona praececellens* Distant.

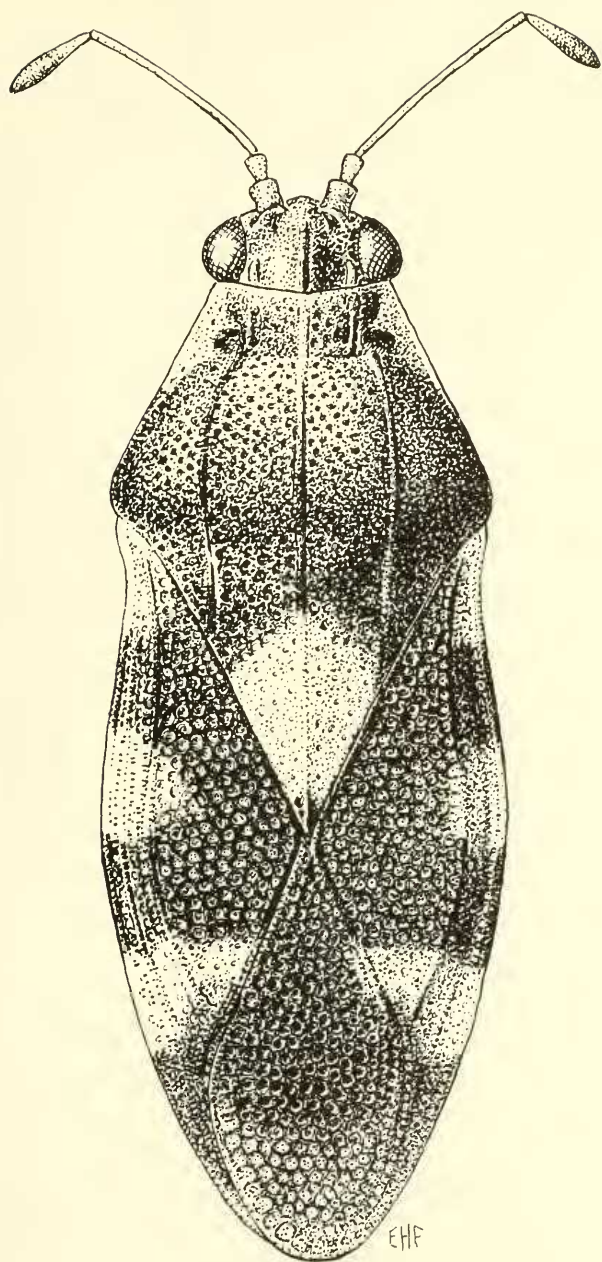


FIGURE 15.—*Zorotingis scitula*, new genus and species.

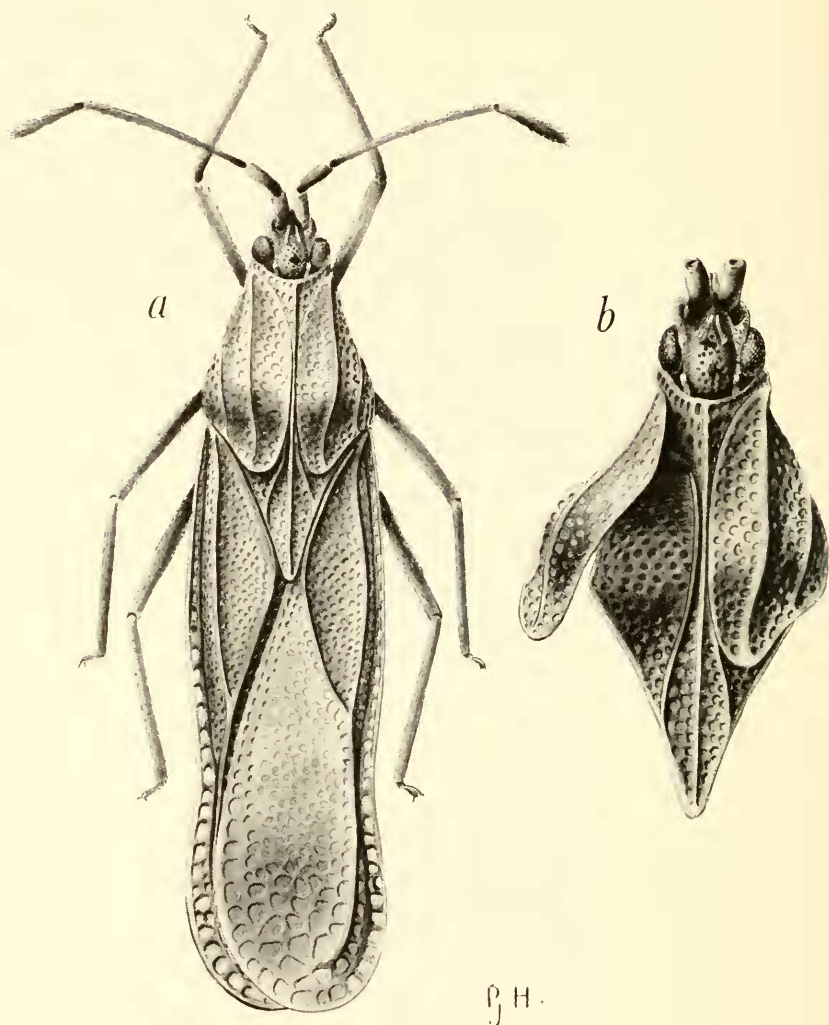


FIGURE 16.—*Banahoana exalla*, new genus and species: *a*, Dorsal view; *b*, left paranotum lifted upward exposing pronotal surface and lateral carina.

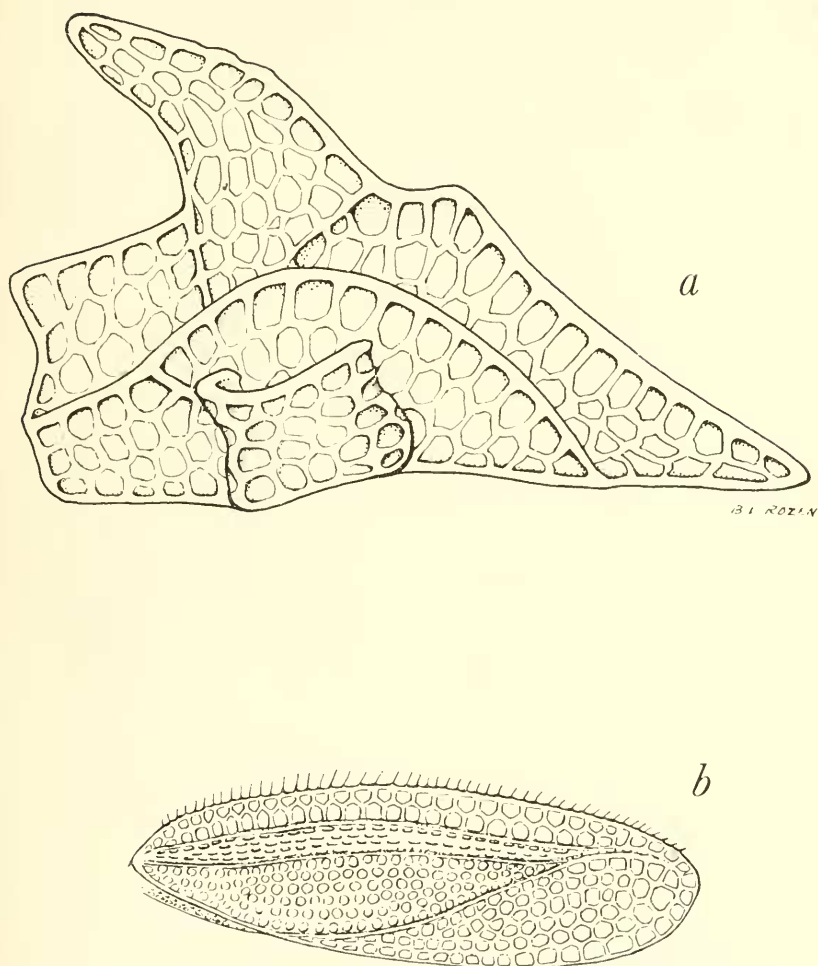


FIGURE 17.—*a*, *Conchotingis borneoana*, new species, lateral view of pronotum to show hood and median carina. *b*, *Leptopharsa elachys*, new species, left elytron.

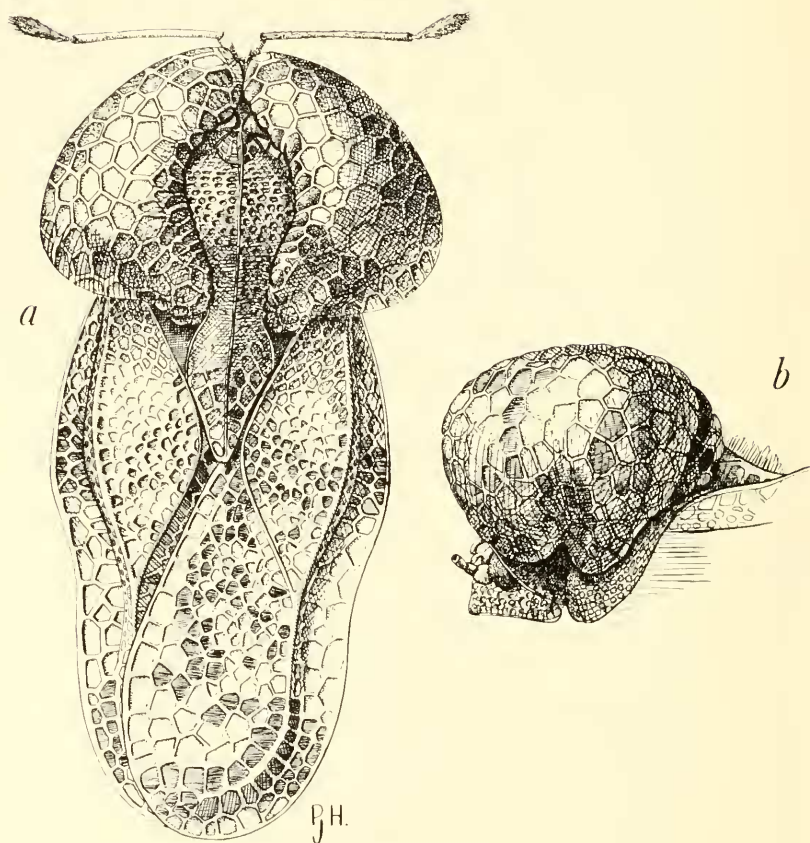


FIGURE 18.—*Zeiratingis peirosa*, new genus and species: *a*, Dorsal view; *b*, profile of head and pronotum showing paranotum and median carina.

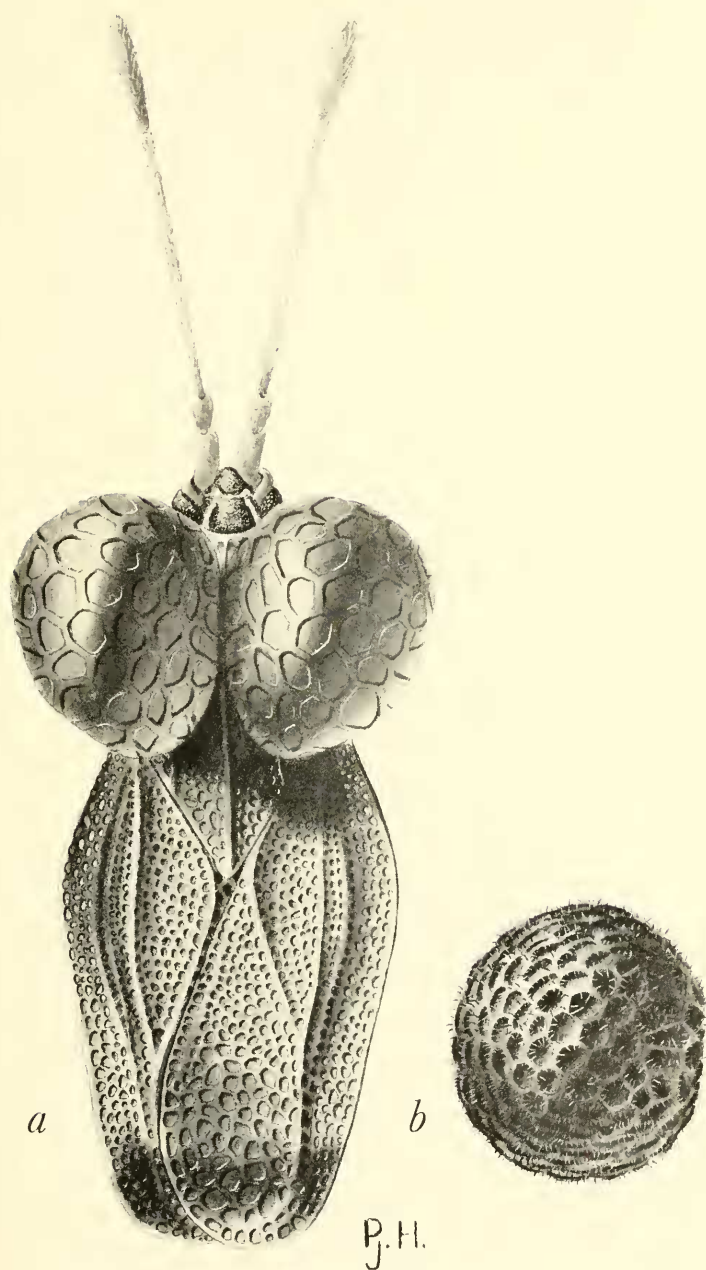


FIGURE 19.—*Penottus oresbius*, new species: *a*, Dorsal view; *b*, left paranotum removed to show large, semiglobose structure with hexagonal cells (these paired structures are peculiar to members of this genus).

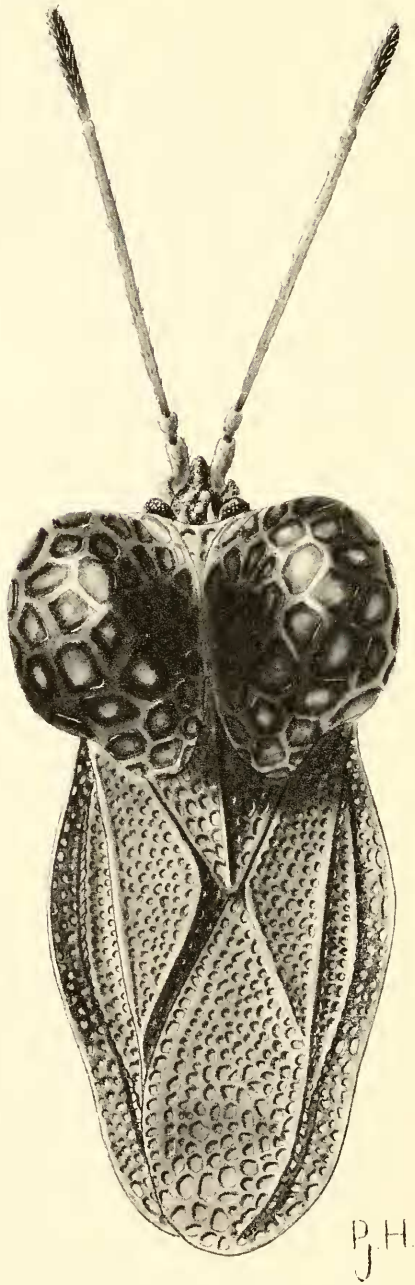


FIGURE 20.—*Penottus bunus*, new species.

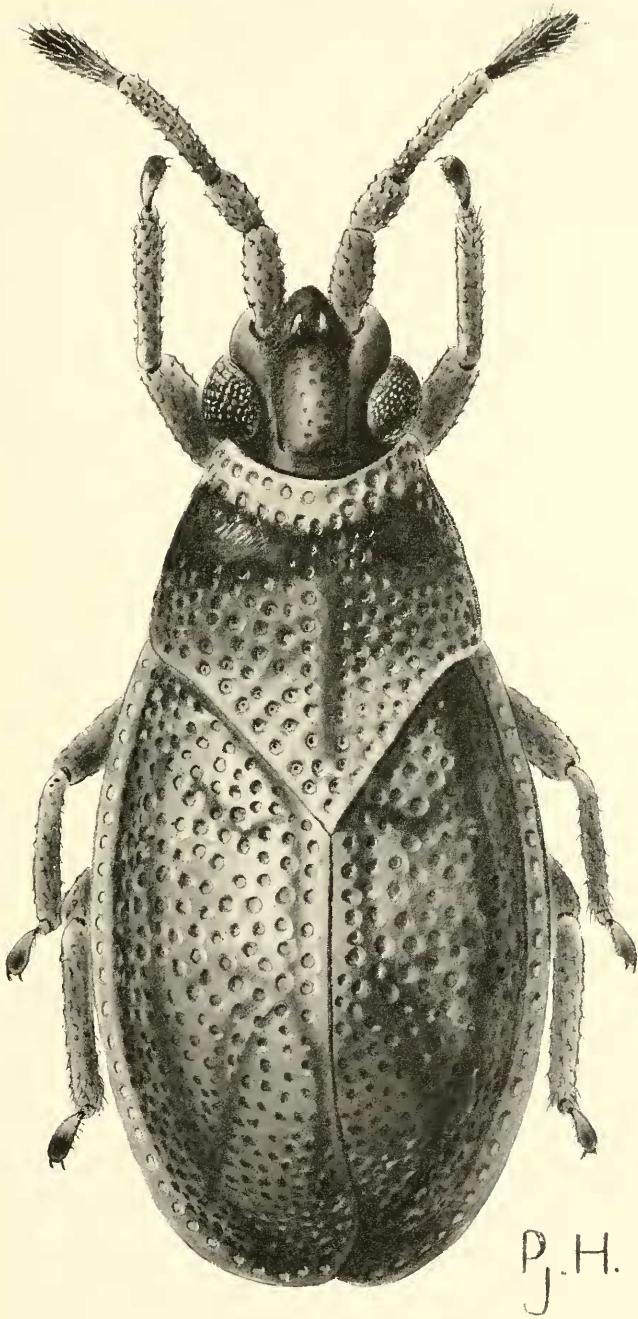


FIGURE 21.—*Agramma pictipennis* (Horváth).

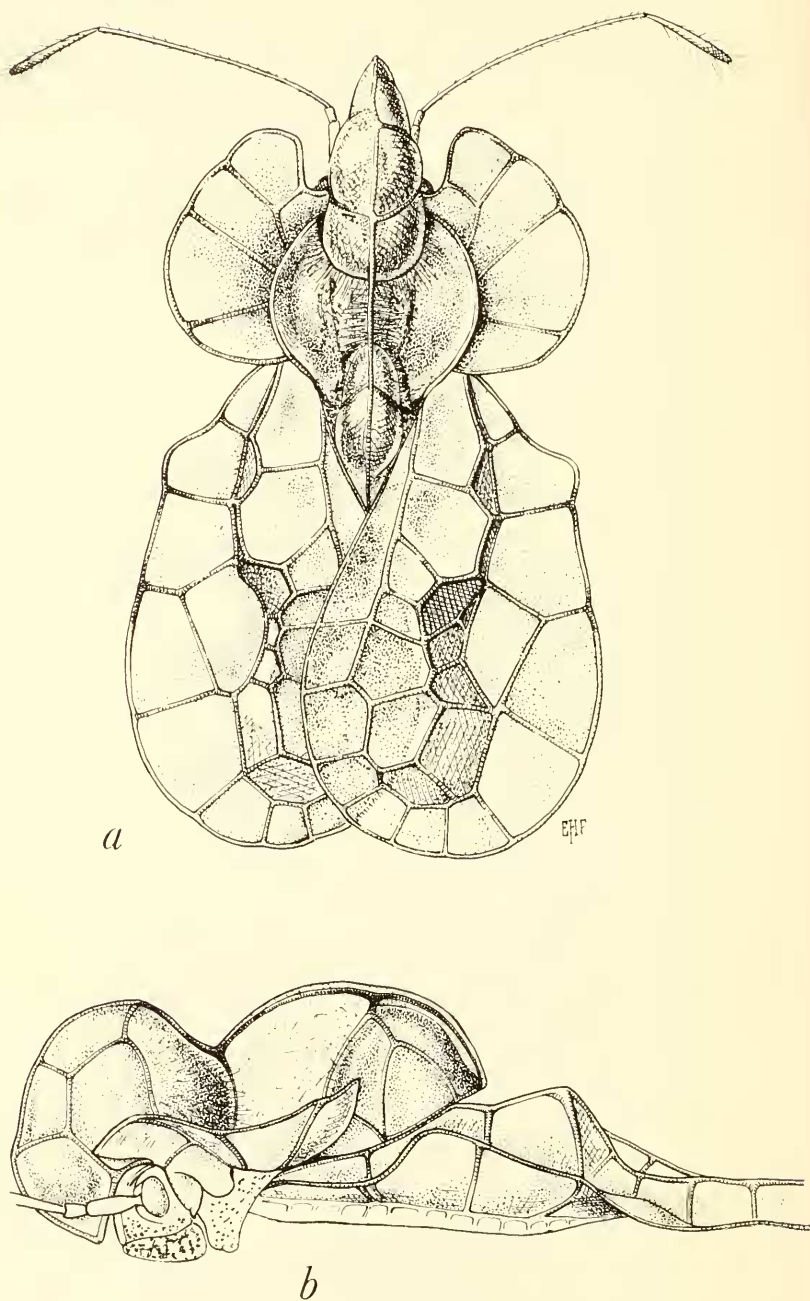


FIGURE 22.—*Bako dieides*, new species: *a*, Dorsal view; *b*, lateral view.

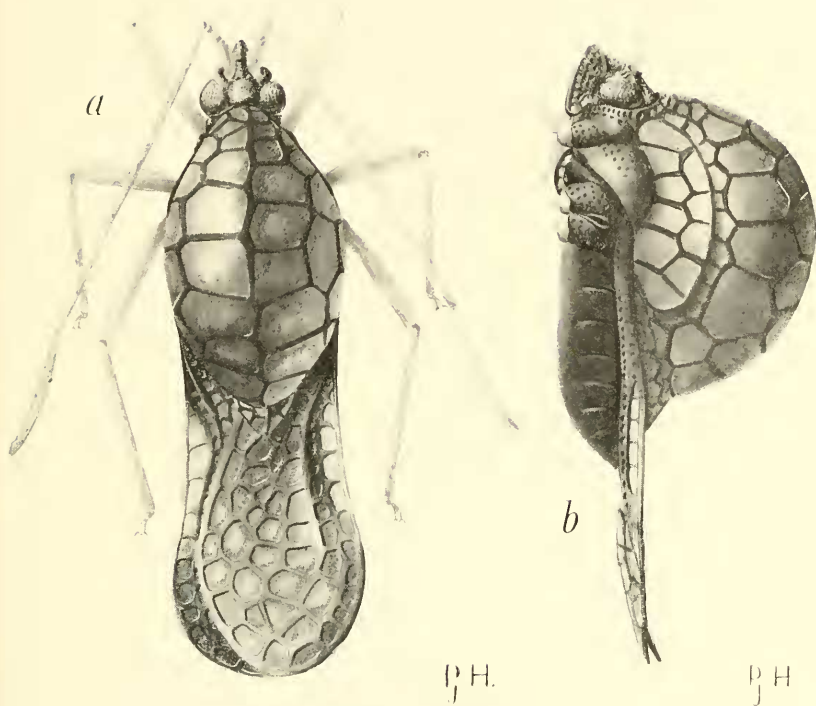


FIGURE 23.—*Cottotricha oceanae* Drake and Poor: *a*, Dorsal view; *b*, lateral view showing enormous hood of pronotal collum and erect paranotum (not connected to hood).

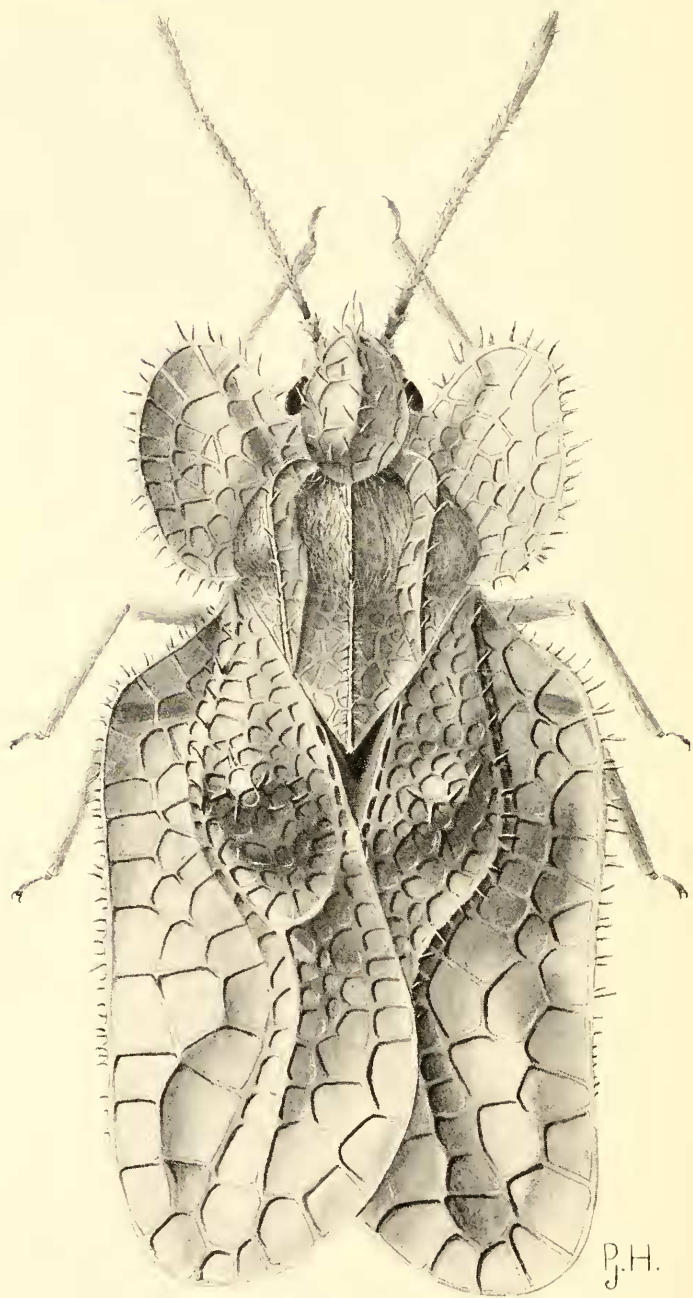


FIGURE 24.—*Caloloma uhleri* Drake and Bruner.

sloping obliquely downward; discoidal area long, about two-thirds as long as the elytron, widest considerably behind the middle, there five areolae deep; sutural area on same horizontal level as the discoidal area, the areolae of subcostal, discoidal, and sutural areas subequal in size. Hind pair of wings clouded with fuscous.

TYPE: Holotype (male), Los Banos, Philippines, C. F. Baker, USNM 65121.

REMARKS: This species differs from *L. hospita* Drake from China (Fukien and Chingan) and Vietnam (Tonkin) by its larger size, longer antennae, narrower costal area, longer discoidal area, and the larger areolae in the elytra.

Genus *Larotingis* Drake

Larotingis Drake, Pacific Ins., vol. 2, no. 3, p. 357, 1960.

Larotingis etes, new species

DESCRIPTION: Long, slender, blackish fuscous, with pronotum and head darker than elytra; costal area from middle to apical fifth flavotestaceous, the pale color behind apex of discoidal area extends inward across subcostal area, body beneath black. Antennae and legs flavotestaceous. Labium flavus brown; sternal laminae of sulcus dark fuscous. Length 3.50 mm., width 1.00 mm.

Head very short, sharply declivent, armed with short, black, tubercular spines; bucculae wide, five areolae deep, closed in front. Antennae rather short, slender, inconspicuously pubescent; segmental measurements: I, 8; II, 6; III, 50; IV, 32. Labium extending to middle of metasternum; laminae of rostral sulcus uniseriate, nearly closed behind. Metasternal scent glands with ostiole and upright sulcus on each metapleuron. Hypocostal lamina uniseriate, terminating posteriorly opposite apex of abdomen. Legs smooth, slender, moderately long.

Pronotum moderately convex across humeral angles, tricarinate, reticulately punctate, areolate on hind process, tricarinate; median carina slightly higher than lateral pair, mostly uniseriate, becoming obsolete on triangular process, anteriorly extending onto collar; lateral carinae distinctly divergent anteriorly, terminating at base of calli; collum truncate in front, areolate, slightly raised; paranota very narrow, cariniform, with two small cells opposite calli, otherwise without areolae; posterior process areolate.

Elytra not wider than pronotum across humeri, much longer than abdomen, distinctly constricted on lateral sides behind middle, without tumid elevations; costal area very narrow, uniseriate; subcostal area nearly upright, biseriate; discoidal area extending beyond middle

of elytra, acutely angulate at base and apex, widest slightly behind middle, there five areolae deep, on same horizontal level as sutural area. Metathoracic wings nearly as long as elytra, densely clouded with dark fuscous.

TYPE: Holotype (female), Surigao, Mindanao, Philippines, C. F. Baker, USNM 65122.

REMARKS: This species is very similar in size and form to *L. aporia* Drake from New Guinea, but is separated from it by the flavotestaceous color of costal area, longer rostrum, much smaller occipital spines on head, and measurements of third and fourth antennal segments (antennal segments III, 60, and IV, 28, in *L. aporia*).

Genus *Sabestena* Drake

Sabestena Drake, Proc. Ent. Soc. Washington, vol. 46, No. 3, p. 67, 1944.

Sabestena alferii, new species

DESCRIPTION: Small, obovate. Head and anterior third of pronotum (anterior row of cells of collar pale) deep black, pronotal disc and base of hind projection of pronotum reddish brown, apical half of posterior process of pronotum grayish testaceous, elytra cinereous testaceous with a few veinlets slightly embrowned, body beneath deep black, slightly shining. Antennae with two basal segments reddish brown, third segment testaceous, the fourth blackish. Legs blackish with femora testaceous. Length 1.00 mm., width of male 0.80 mm., of female 1.00 mm.

Head very short, unarmed, sharply declivent, slightly convex above, with a wide, shallow, median, longitudinal sulcus on vertex; eyes moderately large, rather narrow; antenniferous tubercles short, blunt, concave within. Antennae rather slender, short, sparsely clothed with short pale setalike pubescence; segmental measurements: I, 7; II, 9; III, 30; IV, 14. Legs moderately long, femora slightly swollen, clothed with short, pale, setal pubescence. Ostiole and ostiolar sulcus of metathoracic scent glands indistinct. Hypocostal laminae narrow, composed of a single row of areolae. Labium dark brown, slightly passing mesosternum; laminae of buccal and sternal sulci wide, areolate, closed in front, open at base of metasternum.

Pronotum strongly convex, rather smooth, finely deeply punctate, unicarinate; median carina percurrent, quite distinct, without cells; paranota very narrow, ridgelike, without areolae; collar biseriate, only slightly elevated.

Elytra not wider at base than pronotum, feebly wider across apex of hind process of pronotum, convexly narrowed beyond middle; costal area very narrow, uniseriate; subcostal area wide, with surface sloping slightly convexly downward; discoidal area about two-thirds as long

as elytra, narrowed at both base and apex, widest behind middle, on same horizontal level as sutural area; arcolae of corium not very sharply defined. Dorsal surface sparsely clothed with tiny, flakelike, yellowish pubescence. Brachypterous form unknown.

Types: Holotype (female) and allotype (male), Wadi Nouega (Galala), Egypt, on *Gymnocarous decanter*, collected by A. Alfieri, in whose honor the species is named, USNM 65123.

Remarks: This species can be distinguished at once from *S. africana* Drake by the longer appendages, narrow costal area, coloration, and inconspicuous clothing of yellow flakelike pubescence on dorsal surface. The absence of ostiole and ostiolar sulcus and the presence of corial division in the elytra make the present generic assignment of *S. alferii* rather doubtful. Only the brachypterous form of *S. africana* is known.

Genus *Catoplatus* Spinola

Catoplatus Spinola, Essai sur les genres d'insectes, p. 167, 1837.

Catoplatus horvathi (Puton), new combination

Monanthia flavipes Horváth, Berlin Ent. Zeit., vol. 18, p. 334, 1874, new homonym. *Monanthia horvathi* Puton, Synopsis des hémiptères-hétéroptères de France, vol. 1, p. 119, 1879.—Hüeber, Fauna Germanica, Hemiptera, Heteroptera, vol. 3, p. 343, 1893.

As *Monanthia flavipes* Horváth is a junior homonym of *M. flavipes* Signoret, it is necessary to suppress the former as a homonym of the latter and then to resurrect from synonymy *M. horvathi* Puton as the available specific name. This homonymy heretofore has been overlooked in the literature.

Genus *Celantia* Distant

Celantia Distant, The fauna of British India, including Ceylon and Burma, Rhynchota, vol. 2, p. 137, 1903.

Celantia nitidula (Stål), new combination

Tingis nitidula Stål, Svenska Vet. Akad. Handl., vol. 11, p. 130, 1873. *Phyllontochila nitidula*, Lethierry and Severin, Catalogue général des hémiptères, Berlin, vol. 3, p. 17, 1896.

This species is known only from the type specimens, taken in Western Australia. An examination of the type (Stockholm Museum) shows that it is a typical member of the genus *Celantia* Distant.

C. nitidula is very similar in size, form, and coloration to the Ceylonese *C. vagans* Distant from which it can be separated by the slightly shorter and darker antennae (first two segments black, third brownish fuscous, and fourth mostly black), appressed occipital spines, much shorter frontal pair of spines, biseriate costal and

subcostal areas, costal area without a transverse fascia, and the uniform arrangement of areolae in the elytra.

***Celantia vagans* (Distant)**

FIGURE 13

Leptodictya vagans Distant, Ann. Soc. Ent. France, vol. 47, p. 48, 1903.

Celantia vagans, Distant, The fauna of British India, including Ceylon and Burma, Rhynchota, vol. 2, p. 137, fig. 101, 1903.

Originally described from Ceylon. This species differs from *C. nitidula* Stål in having longer antennae, wider costal areas, and a broad fuscous fascia near the middle of the elytra. The type, in the British Museum (Natural History), is illustrated in figure 13.

Genus *Cantinona* Distant

Cantinona Distant, Trans. Linn. Soc. London, vol. 16, No. 2, p. 158, 1913.

***Cantinona praececellans* Distant**

FIGURE 14

Cantinona praececellans Distant, Trans. Linn. Soc. London, vol. 16, p. 159, fig. 15, 1913.

This species is known only from the Seychelles. One of the type specimens, in the British Museum (Natural History), is illustrated in figure 14.

***Zorotingis*, new genus**

DESCRIPTION: Small, depressed, without tumid elevations on pronotum and elytra.

Head very short, only slightly produced in front of eyes, inserted into pronotum up to hind margins of eyes, armed with spines as in other genera of the subfamily Tinginae; bucculae areolate, closed anteriorly, not extending beyond apex of clypeus. Labium long, not reaching beyond metasternum; laminae areolate, widely separated from each other, open behind. Antennae moderately long, slender, shorter than pronotum; segments I and II very short, segment III longest and very slender, segment IV moderately long, fusiform. Legs rather short, fairly stout. Orifice of metathoracic scent glands on each metapleuron with a long narrow upright channel whose sides are more raised at apex. Hypocostal laminae very narrow, composed of one row of tiny cells.

Pronotum very slowly narrowed anteriorly, closely punctate, tricarinate, calli present; paranota very narrow, laterally extended, not reflexed, punctate, wider opposite calli and collar; hood very low, flat, subquadrate in outline, not extended anteriorly, posteriorly pro-

jecting between calli, bounded on lateral and hind margins by straight, low ridges.

Elytra longer than abdomen, divided into the usual areas; costal area very narrow, minutely punctately areolate; subcostal area narrow, sharply sloping downward; discoidal area very large, extending considerably beyond middle of elytra, on same horizontal plane as sutural area. Hind wings longer than abdomen.

TYPE SPECIES: *Zorotinyis scitula*, new species.

REMARKS: This genus is near subgenus *Tingis* of Genus *Tingis* Fabricius. It is distinguishable by the finely punctate paranota and costal areas of elytra, the truncate anterior margin of collar with the very low flat subquadrate hood extending backward between calli, and the very long upright channel of metathoracic scent glands on each metapleuron. The striking coloration also sets it apart at once from members of allied genera.

Zorotinyis scitula, new species

FIGURE 15

DESCRIPTION: Small, obovate, fuscoferrugineous prominently marked with pale flavotestaceous. Legs stramineous with all femora very widely banded at middle with dark fuscous. Antennae stramineous with basal two segments brownish and fourth segment blackish fuscous. Prominent pale markings of pronotum and elytra as illustrated in figure 15. Body beneath dark rufous brown. Bucculae and labial laminae of sulcus dark stramineous. Length 2.85 mm., width (across apex of triangular process) 1.10 mm.

Head very short, with a median longitudinal furrow, armed with four short appressed pale spines. Antennae 1.00 mm. long; segmental measurements: I, 9; II, 6; III, 45; IV, 19. Labium extending onto metasternum.

Pronotum 1.40 mm. long, 1.00 mm. wide, with lateral sides straight and slowly converging anteriorly; carinae long, very distinct, without areolae, lateral pair slightly convex within on disc; collar wide, punctate, truncate in front, with a very low, flat, rectangular hood; posterior process very long, triangular.

Elytra a little longer than abdomen, with sutural areas overlapping so that their apices lie jointly rounded in repose; costal area very narrow, composed mostly of two rows of small punctures; subcostal area biseriate, the cells quite small; discoidal area 1.35 mm. long, very large, three-fourths as long as elytra, eight areolae deep at widest point, acutely angulate at both base and apex, with outer boundary vein moderately arcuate; sutural area with areolae becoming slightly larger apically. Metathoracic wings densely clouded with dark fuscous, extending a little beyond tip of abdomen.

TYPE: Holotype (female), Davao, Mindanao, Philippines, C. F. Baker, USNM 65124.

REMARKS: The holotype of *Z. scitula* is illustrated in figure 15. This is one of the prettiest, most strikingly colored lacebugs of the Philippines.

Banahaona, new genus

DESCRIPTION: Elongate, slender, nearly parallel sided.

Head short, little extended in front of eyes, armed with five spines, eyes behind touching foremargin of pronotum; bucculae long, wide, areolate, with ends contiguous in front, not projecting beyond the tip of clypeus. Antennae rather short; segment I shortest, stouter than II; segment II a little longer than I; segment III longest, moderately slender; segment IV longer than II, fusiform. Labium fairly long, extending between middle coxae; laminae low on prosternum, higher and mostly uniseriate on mesosternum, still higher and largely biseriate on metasternum, open behind but with inner surfaces resting flatly against each other apically. Orifice and sulcus of metathoracic scent glands not visible. Hypocostal lamina uniseriate.

Pronotum moderately convex, punctate, tricarinate, largely concealed by the completely reflexed paranota; only the median carina, posterior process, anterior part of collar, and small hood visible from dorsal aspect; median carina long, lateral carinae converging anteriorly on posterior process, then running against median carina beneath the reflexed paranota almost to calli, slightly divergent just behind calli; paranota very large, with outer margins touching median carina, each paranotum with two prominent well formed longitudinal carinae, the long median carina extending the entire length of paranotum, the other carina near humeral angle much shorter; hood small, triangular in outline, not produced in front.

Elytra long, narrow, not wider than pronotum at humeral angles, longer than abdomen, with sutural areas overlapping so as to rest with apices jointly rounded behind, divided into the usual areas; costal area narrow; subcostal area also narrow, subvertical; discoidal area large, extending beyond middle of elytra, on same horizontal plane as that of sutural area.

TYPE SPECIES: *Banahaona exalla*, new species.

REMARKS: This genus can be distinguished at once from all other genera of the subfamily Tinginae by the prominent median longitudinal carinae of the paranota. These carinae are not related to the lateral carinae of the pronotum, although at first glance they appear to be true pronotal carinae. The paranotal and pronotal carinae are quite distinct from one another. The median longitudinal carina of each paranotum is long, straight, and prominent and extends from the

front margin opposite the collar to the hind margin of the paranotum and is fully as prominent as the median carina of the pronotum.

Banahaona exalla, new species

FIGURE 16

DESCRIPTION: Elongate, slender, with apical part of elytra blackish fuscous (both veins and cells); body beneath dark brown, the costal area testaceous with hyaline cells. Length 4.00 mm., width 1.10 mm.

Head with five, short, appressed spines, antenniferous tubercles small; bucculae pale, triseriate, with ends contiguous in front. Labium brown with blackish tip, extending onto mesosternum; labial laminae not widely separated, very low on prosternum, considerably higher on mesosternum and mostly uniseriate, higher and mostly biseriate on metasternum. Antennae 1.52 mm. long; segment I brown, thicker and distinctly longer than II; segments II and III testaceous; segment IV fusiform, mostly dark fuscous; segmental measurements: I, 14; II, 17; III, 65; IV, 26.

Legs rather slender, sparsely furnished with very short setal hairs.

Pronotum mostly concealed by completely reflexed paranota, only the median carina, posterior process, anterior part of collar, and small hood exposed; hood very small, not produced in front, triangular in outline; carinae without cells; lateral carinae visible on posterior process, entirely concealed under paranota on pronotum proper, converging to median carina on triangular process, then running along under paranota against median carina to beyond disc, thence slightly divergent to calli (paranotum removed to expose lateral carinae of pronotum). Paranota wide, resting against median carina, each paranotum with a long, median, longitudinal carina (as long as paranotum) and another much shorter longitudinal carina near humeral angle.

Elytra much longer than abdomen, not wider than pronotum across humeral angles; costal area very long, narrow, uniseriate as far as apex of discoidal area, thence largely biseriate; subcostal area narrow, mostly uniseriate, biseriate in widest part opposite apex of discoidal area; discoidal area large, seven areolae deep in widest part just behind middle, two-thirds as long as elytra, acutely angulate at both ends, bounded by prominent boundary veins. Metathoracic wings dark fuscous.

TYPES: Holotype (male) and allotype (female), Mount Banahao, Luzon, Philippines, USNM 65125.

REMARKS: The holotype of *B. exalla* is illustrated in figure 16a. This is the only lacebug so far described that has two longitudinal carinae on each paranotum in addition to the three pronotal carinae.

Genus *Conchotingis* Drake

Conchotingis Drake, Philippine Journ. Sci., vol. 83, No. 1, p. 71, 1954.

Conchotingis borneoana*, new species*FIGURE 17a**

DESCRIPTION: Large, broad, nearly rectangular in outline, brown with slight tinge of testaceous, body beneath dark reddish brown, appendages ferrugineous. Length 4.75 mm., width 2.30 mm.

Head rather short, extended about twice the length of an eye in front of eyes, armed with five long spines; hind pair erect, rather slender; median spine erect, stoutest, and longest; anterior pair suberect, as long as hind pair; bucculae long, wide, aerolate, with ends meeting beneath apex of clypeus; labium extending to end of sulcus; laminae testaceous, composed of one row of large cells, parallel, open behind. Orifice of metathoracic scent glands with a short, upright channel on each metapleuron. Antennae moderately furnished with setalike, pale hairs, each of which is scarcely longer than the thickness of segment at point of origin. Hypocostal laminae long, uniseriate.

Pronotum moderately convex, coarsely pitted, very wide across humeri, sides rather strongly converging anteriorly in front of humeri, tricarinate; hood fairly large, very long, tectiform, angulately projecting over base of head, extending backward tectiformly almost to center of disc, then recurved, hooklike (fig. 17a), laterally compressed, not strongly inflated; median carina high, terminating anteriorly at base of hood near center of disc, mostly biseriate, triseriate in the arched part just behind hood; lateral carinae long, high, terminating anteriorly at calli, distinctly convexly rounded above, mostly biseriate, triseriate in highest part; paranota moderately long, much wider than long, turned nearly obliquely upward, with anterior and posterior margin rolled upward.

Elytra very wide, rather sharply expanded basally, much longer than abdomen; costal area very wide, obliquely widened at base, mostly four areolae deep, the areolae embrowned in subbasal and apical bands; subcostal area rather narrow, subvertical, mostly uniseriate, biseriate in widest part; discoidal area very large, extending beyond middle of elytra, widest beyond middle, there five or six aerolae deep, acutely angulate at base and apex. The outer boundary vein distinctly raised and evenly bowed outward; sutural area large, on same horizontal plane as discoidal area. Metathoracic wings clouded with dark fuscous, extending a little beyond tip of abdomen.

TYPE: Holotype (female), Sandakan, Borneo, C. F. Baker, USNM 65126.

REMARKS: The profile of the pronotum of the holotype of *C. bor-neoana* is illustrated in figure 17a. This singular species differs from the Madagascar members of the genus in having the costal area lying flat and not rolled upward and inward on the basal half of elytra. The hood and carinae of this species also differ from those of its congeners.

Zeiratingis, new genus

DESCRIPTION: Large, oblong, with an extremely large, inflated, subglobose, reflexed (upright) paranotum.

Head short, slightly produced in front of eyes, armed with five spines, inserted into prothorax to hind margins of eyes; bucculae moderately long, wide, areolate, with ends meeting in front beneath apex of clypeus; eyes moderately large, transverse. Antennae slender, moderately long; segments I and II very short, only slightly swollen; segment III long and quite slender; segment IV moderately long, longer than segments I and II combined. Labium very long, extending upon or beyond metasternum. Scent glands with orifice and upright channel on each metapleuron. Hypocostal lamina long, uniseriate.

Pronotum moderately convex, punctate, with lateral sides slowly converging anteriorly in front of humeri, tricarinate; carinae long, foliaceous, lateral pair concavely curving around the outer part of pronotum close to base of paranota, thus largely concealed from dorsal aspect although nearly as high as the paranota; hood small, tectiform, truncate in front with collar, produced backward between calli. Paranota huge, erect, with anterior sides meeting over collar, not concealing median, longitudinal part of pronotum nor extending over posterior pronotal process.

Elytra wider and longer than abdomen, divided into the usual division, without tumid elevations, discoidal area extending beyond middle of elytra and on same horizontal plane as sutural area (fig. 18). Metathoracic wings nearly as long as elytra.

TYPE SPECIES: *Zeiratingis peirosa*, new species.

REMARKS: This genus is allied to genus *Paseala* Schouteden of Africa but is separated from it by the unusually high multiseriata strongly concave (within) lateral carinae and by the slender shorter appendages.

Zeiratingis peirosa, new species

FIGURE 18

DESCRIPTION: Head short, little extended in front of eyes, inserted into pronotum up to eyes, armed with five short, appressed spines; bucculae wide, mostly biseriata, contiguous in front, not surpassing apex of head. Antennae fairly slender, nude, testaceous with last

segment brownish fuscous; segmental measurements; I, 8; II, 8; III, 84; IV, 28. Labium brownish, extending onto metasternum; uniseriate, nearly parallel on mesosternum, subcordate with ends not quite meeting on metasternum. Orifice of metathoracic scent glands with an upright channel on each metapleuron. Legs rather slender, testaceous with a brownish tinge, inconspicuously pubescent. Length 4.30 mm., width (across elytral band) 1.75 mm.

Pronotum moderately convex, punctate, tricarinate, mostly concealed by the enormous, semiglobose, reflexed paranota, which cover all but apex of head, and by the median and triangular process of pronotum; median carina considerably elevated, areolate; lateral carinae strongly elevated on pronotum, semiglobose, almost as foliaceous as paranota, strongly concave close to the outer margin of pronotum under the paranota, thus not clearly visible from dorsal aspect; paranota exceedingly large, semiglobose, erect, with sides meeting in front, with outer margins forming an angulate opening posteriorly so as to expose discal surface of pronotum; collar truncate in front, sharply elevated at middle so as to form a small tectiform hood.

Elytra wider and longer than abdomen, testaceous with premedian crossband, apical part and many veinlets in discoidal and sutural areas brown or brownish fuscous; costal area moderately wide, biseriate, areolae (except in band and darkened apex) hyaline; subcostal area narrower than costal area, upright, biseriate; discoidal area very large, extending considerably beyond middle of elytra, with outer boundary vein slightly arcuate, acutely angulate at base and apex, widest at middle, there eight or nine areolae deep; sutural area large, on same horizontal plane as discoidal area, the areolae becoming a little larger posteriorly.

TYPE: Holotype (female), Tonkin, Vietnam, August 1930, USNM 65127.

REMARKS: The holotype of *Z. peirosa* is illustrated in figure 18. This species is closely related to *Zeiratingis dissita*, new species, by similar coloration and the extremely large, inflated, upright paranota. Distinguishing characteristics are given in the remarks immediately below under *Z. dissita*.

Zeiratingis dissita, new species

DESCRIPTION: Large, oblong, with enormous paranota. Brownish with costal areas (except premedian and apical bands brown, including cells) and apices of discoidal areas testaceous; body beneath dark brown; bucculae and antennae brownish testaceous, legs brownish; pronotal carinae brownish testaceous. Length 4.75 mm., width of elytra 2.10 mm., width of paranota 2.40 mm., height of paranotum 2.10 mm.

Head short, scarcely extended in front of eyes, concealed dorsally by the reflexed paranota, armed with five short appressed spines; bucculae wide, areolate, with ends meeting in front, not extending beyond tip of clypeus. Labium long, slightly longer than labial sulcus; labial laminae moderately wide, uniseriate, not very widely separated from each other, open behind. Orifice of metathoracic scent glands with an upright channel on each metapleuron. Legs moderately long, smooth. Antennae smooth, quite slender, 2.23 mm. long, when raised upright only a little longer than the height of paranota, shorter than the width across both paranota; segmental measurements: I, 10; II, 8; III, 108; IV, 40.

Pronotum broadly convex across humeri, punctate, tricarinate; median carina long, plainly visible between reflexed paranota, foliaceous, moderately elevated, areolate; lateral carinae very strongly foliaceous, strongly convex within, curved around outer edge of pronotal disc close to base of and completely under paranota, not plainly visible from above, very high and several cells deep; paranota enormously developed, somewhat subglobose, reflexed upright, with sides meeting in front, covering entire head in front and behind the base of posterior triangular process, sides above and behind not in contact with each other.

Elytra large, much wider and a little longer than abdomen, widest in front of middle, with sutural areas overlapping and their apices jointly rounded; costal area wide, mostly triseriate, the cells moderately large, not very regularly arranged, clear (except in bands); subcostal area narrow, biseriate, nearly upright; discoidal area very large, extending beyond middle of elytra, narrowed at both ends, 9 or 10 areolae deep in widest part, nearly two-thirds as long as the elytra; sutural areas with areolae a little larger than those in discoidal areas, overlapping so that the apices are jointly rounded in repose. Metathoracic wings long, slightly clouded with fuscous.

TYPE: Holotype (male), Sandakan, Borneo, C. F. Baker, USNM 65128.

REMARKS: This species differs from *Z. peirosa* by its slightly larger size, larger paranotum, more foliaceous median carina, and wider triseriate costal area of elytra.

Engyotingis, new genus

DESCRIPTION: Elongate oblong, distinctly lacy with veinlets thin and areolae moderately large.

Head short, very little produced in front of eyes, inserted into prothorax up to eyes, armed with five spines; bucculae moderately long, areolate, contiguous in front, not extending beyond apex of head; antenniferous tubercles small, rounded in front. Antennae long,

moderately slender; segment I short, slightly swollen, longer and stouter than II; segment III very long, rather slender; segment IV long, one-half as long as III. Labium long, attaining end of sulcus; laminae foliaceous, areolate, open behind. Scent glands with orifice and upright channel on each metapleuron. Hypocostal laminae uniseriate. Pronotum punctate, tricarinate, all carinae elevated, areolate, the lateral pair more widely separated and concave within on pronotal disc.

Paranota enormously developed, reflexed upright, inflated, semiglobose, with anterior margins meeting over hood, with outer margins divergent posteriorly exposing pronotal disc, not covering triangular pronotal process or head; hood small, tectiform, only slightly produced in front. Legs moderately long, rather slender.

Elytra much longer than abdomen, slowly obliquely widened at base, wider than abdomen, without tumid areas, divided into the usual divisions, with discoidal area barely reaching middle of elytra, the sutural areas overlapping and lying jointly rounded behind in repose. Metathoracic wings nearly as long as elytra.

TYPE SPECIES: *Engyotingis cybele*, new species.

REMARKS: This genus is distinguished from the other genera with enormous semiglobose inflated erect paranota described herein by the thinner veinlets of the lacy network and the much longer last antennal segment. The genus *Xenotingis* Drake of the Orient has the outer part of the costal area either rolled up or turned over on itself, the antennae thinner, and the fourth antennal segment much shorter.

Engyotingis cybele, new species

DESCRIPTION: Brownish testaceous with areolae hyaline, head dark ferruginous, pronotal disc brown, areolae of enormous paranota tinted with brown, body beneath dark brown, antennae brown with last segment mostly blackish, legs brown with tibiae brownish testaceous. Length 3.80 mm., width (behind apex of pronotal process) 1.22 mm.

Head armed with five moderately long spines, hind pair appressed, the three frontal spines porrect. Labium extending to end of channel. Antennae very long, with extremely short, inconspicuous pubescence, hairs pale and longer on fourth segment; segmental measurements: I, 14; II, 10; III, 116; IV, 72. Legs inconspicuously pubescent.

Pronotum moderately swollen, distinctly punctate; median carina strongly foliaceous, distinctly arched, highest behind pronotal disc, composed of one row of very high, short areolae; lateral carinae arched, nearly as highly elevated as median carina, very widely and concavely separated from each other on pronotal disc; all carinae composed of one row of very high cells; hood moderately large, inflated, tectiform,

projecting posteriorly from calli, feebly extended in front. Paranota extremely large, inflated, semiglobose, reflexed upright, covering almost all of hood and most of pronotum proper, not covering median carina nor triangular process; measurements: Height 90, length 82, width 50.

Elytra composed of moderately large, clear areolae; costal area fairly wide, mostly biseriate, three areolae deep in widest part; subcostal area mostly uniseriate, with three or four extra cells opposite apex of discoidal area; discoidal area not quite reaching to middle of elytra, acutely angulate at both base and apex, three or four cells deep in widest part just behind the middle; sutural area large with areolae larger in apical part.

TYPE: Holotype (male), Basilan Island, Philippines, USNM 65129.

REMARKS: The only other member of the genus, *E. tonkinana* (Drake and Maa), is a distinctly broader, darker species with large dark brown areas on the elytra and with the costal area entirely triseriate.

***Engyotingis tonkinana* (Drake and Maa), new combination**

Ypsotingis tonkinana Drake and Maa, Quarterly Journ. Taiwan Mus., vol. 8, No. 1, p. 7, 1955.

This species is known only from Tonkin, Vietnam. As it belongs to the new genus described above, it is here so transferred.

Genus *Leptopharsa* Stål

Leptopharsa Stål, Svenska Vet.Akad. Handl., vol. 11, No. 2, pp. 122 and 126, 1873.

***Leptopharsa elachys*, new species**

FIGURE 17b

DESCRIPTION: Small, oblong, whitish testaceous with convexity across humeral angles of pronotum brownish, head blackish, last antennal segment and tips of tarsi infusate, and body beneath stramineous. Length 2.00 mm., width (across elytra) 0.95 mm.

Head very short, armed with five short, appressed, whitish spines; eyes large, dark fuscous; bucculae whitish, areolate, with ends meeting beneath apex of clypeus. Labium brownish, extending onto mesosternum; laminae low, whitish, more widely separated from each other on metasternum. Antennae short, 0.58 mm. long, furnished with a few hairs; segmental measurements: I, 8; II, 6; III, 20; IV, 12. Hypocostal lamina uniseriate.

Pronotum moderately convex, pitted, tricarinate; median carina long, distinct, without cells, the lateral pair practically as high as median, slightly divergent in front of disc. terminating at calli; calli

impressed, impunctate, dark fuscous; collar wide, truncate in front, without hood, areolate; paranota narrow, extended horizontally, composed of two rows of areolae in front of calli and only one row of areolae behind calli; triangular process areolate.

Elytra a little longer than abdomen, scarcely more than width of costal areas, wider than abdomen; costal area biseriate, the areolae moderately large, regularly arranged, quadrate and clear; subcostal area narrower than costal area, nearly vertical, composed largely of four rows of small cells; discoidal area extending beyond middle of elytra, widest near middle, acutely angulate at both ends, five cells deep in widest part, the sutural area on same horizontal plane, with slightly larger areolae. Outer margins of paranota and elytra with small, setalike spines (fig. 17*b*), the boundary veins of discoidal area beset with smaller upright setal spines.

TYPE: Holotype (male), Windhoe, South-West Africa, elevation 5,000 feet, September 19, 1920, USNM 65130.

REMARKS: The right elytron of the holotype of *L. elachys* is illustrated in figure 17*b*. The size, short appendages, and spinulate outer margins of paranota and elytra and the boundary veins of discoidal areas distinguish this species from other African congeners.

Genus *Penottus* Distant

Penottus Distant, Report on the Rhynchota. Part 1, Heteroptera. Fasc. Malayan Zool., vol. 1, p. 254, 1903.

Penottus oresbius, new species

FIGURE 19

DESCRIPTION: Large, oblong, brownish, with head brownish black, thimblelike paranota dark fuscous brown, triangular projection of hind margin of pronotum brown, discoidal and sutural areas of elytra largely brown, and elytra with a wide, subapical band fuscous; body beneath reddish brown, sometimes with prosternum and mesosternum and genital segments black. Labium dark brown, laminae of buccal channel brown fuscous, and of sternal sulcus brownish testaceous. Legs brownish testaceous, pubescence indistinct. Antennae brownish testaceous, first three segments indistinctly pubescent, fourth segment with grayish pubescence and several longer dark hairs. Length 4.80 mm., width 2.10 mm.

Head very short, feebly produced in front of eyes, armed with five spines; anterior three spines short, thick, erect, tubercularlike, the posterior pair much longer, appressed; antenniferous tubercles short, bluntly rounded in front, not spinelike. Antennae long, slender; segmental measurements: I, 20; II, 10; III, 120; IV 40. Legs rather short, slender, tarsi quite slender. Metathoracic scent glands with

ostiole and obliquely, narrow channel on each metapleuron. Hypocostal lamina long, uniseriate. Abdomen very broad.

Pronotum, except for median part of collum and posterior part of hind pronotal process concealed by the enormous thimblelike reflexed paranota; median carina raised, very distinct, without areolae, the lateral pair concealed by paranota, also median carina on pronotal disc; paranotum enormous (fig. 19*b*), shaped like an inverted thimble, basal length and greatest height nearly subequal (130:125); each paranotum conceals a subglobose, honeycombed outgrowth of pronotum as illustrated in figure 19*b*.

Elytra wide, sutural areas only partly overlapping in repose; costal area wide, mostly four areolae deep; subcostal area wide, divided by a longitudinal vein, with one row of nearly upright areolae, the wider inner part distinctly longitudinally sulcate, mostly three areolae wide; discoidal area large, about two-thirds as long as the elytron, bounded on all sides by an elevated vein, seven or eight areolae deep in widest part; sutural area on same horizontal level as discoidal area, with larger areolae. Male unknown.

Types: Holotype (female), Malacca, Southern Malay Peninsula, USNM 65131. Paratypes, 2 specimens, Sandakan, Borneo, all taken by C. F. Baker.

Remarks: The holotype of *P. oresbius* is illustrated in figure 19. The species is separated from *P. verdicus* by the much larger paranota, exposed lateral carinae on posterior process of pronotum, and narrower costal areas. In all of the described species of the genus *Penottus* Distant, the large subglobose honeycomb structure is present under each of the inverted thimblelike paranota. The function of these paired, pronotal structures is unknown.

Penottus bunus, new species

FIGURE 20

DESCRIPTION: Large, brownish testaceous, with many veinlets of elytra dark brown and of paranota blackish fuscous; head blackish fuscous, with spines brown; abdomen beneath black, slightly pruinose. Antennae brownish testaceous, with fourth segment black. Legs pale brown, tips of tarsi darker. Length 4.25 mm., width 2.00 mm.

Head very short, very little produced in front of eyes, armed with five blunt stout spines; anterior three spines very short, erect, tuberculiform, hind pair longer and appressed; bucculae areolate, closed in front. Antennae fairly long, slender, indistinctly pubescent, last segment with grayish pubescent hairs; segmental measurements: I, 14; II, 10; III, 120; IV, 45. Legs rather short, slender, indistinctly pubescent; tarsi slender, with tips dark. Metathoracic scent glands

with an ostiole and a narrow, upright canal on each metapleuron. Hypocostal lamina uniseriate.

Pronotum almost entirely concealed by the enormous reflected upright thimblelike inflated paranota; only the anterior margin of collum and the median and apical parts of hind process of pronotum visible; median carina distinctly elevated, without areolae, concealed by paranota on pronotal disc; lateral carinae not visible, entirely covered by the paranota. Each paranotum slightly longer at base than its greatest height (120:110), nearly vertical in front, tilted slightly outward.

Elytra longer and wider than abdomen, areolae not arranged in very regular rows; costal area wide, mostly three areolae deep; subcostal area wide, divided by a prominent, longitudinal vein into two parts, outer part erect and only one areolae wide, the inner part longitudinally sulcate and three areolae deep in widest part; discoidal area very large, two-thirds as long as elytra, acutely angulate at base and apex, eight or nine areolae deep in widest part, bounded on all sides by a prominent vein. Hind wings embrowned, longer than abdomen.

TYPE: Holotype (female), Sandakan, Borneo, C. F. Baker, USNM 65132.

REMARKS: The holotype of *P. bunus* is illustrated in figure 20. The slowly rounded outer margins of elytra, short cephalic spines, and narrower costal areas distinguish this species from *P. oresbius*, described immediately above.

Genus *Agramma* Stephens

Agramma Stephens, The nomenclature of British insects . . ., p. 64, 1829; A systematic catalogue of British insects, 2 parts, p. 336, 1829.

Agramma pictipennis (Horváth)

FIGURE 21

Serenthia pictipennis Horváth, Természetráje Füzetek, vol. 25, p. 604, 1902.

This species from Western Australia (Glen Innes) is known solely from the type specimens, one of which is illustrated in figure 21. It is the only member of the genus known from the Australian Region.

Genus *Ildefonsus* Distant

Ildefonsus Distant, The fauna of British India, including Ceylon and Burma, Rhynchota, vol. 5, p. 110, 1910.

Ildefonsus nexus, new species

DESCRIPTION: Moderately large, broadly obovate, brownish testaceous, with some veinlets brown or fuscous, head and pronotum blackish fuscous, body beneath dark ferrugineous. Legs long, slender, brownish testaceous. Length 3.25 mm., width (elytra) 1.80 mm.

Head very short, sharply declivent in front, armed with short appressed testaceous spines. Antennae with first two segments slightly swollen, short, other segments wanting. Labium long, brownish testaceous, extending to end of rostral channel; buccal laminae wide, areolate, nearly closed in front; sternal laminae of labial sulcus composed of one row of large areolae, pale testaceous. Metathoracic scent glands with ostiole and nearly upright sulcus on each metapleuron. Legs long, slender, brownish, sparsely clothed with short, pale pubescence.

Pronotum slightly convex across humeri, coarsely punctate, tricarinate; median carina strongly elevated, composed of one row of rectangular cells, attached to median vein near middle of hind surface of hood, higher and distinctly arched on middle of disc; lateral carinae much less elevated than median carina, composed of one row of small cells, distinctly constricted near base of hind process, thence anteriorly divergent, terminating anteriorly near calli; hood moderately large, inflated, extending forward over head, not covering eyes, extending backward to base of pronotal disc; paranota large, reflexed obliquely upward, nearly semiovalate, four cells deep in widest part.

Elytra elyptoidal in outline, considerably longer and wider than abdomen, subobliquely amplified at base; costal area very wide, composed largely of three rows of large, clear cells; subcostal area nearly upright, uniseriate; discoidal area large, elyptical in outline, extending backward beyond middle of elytra, concavely impressed, four areolae deep in widest part. Areolae moderately large, hyaline, and iridescent.

TYPE: Holotype (female), Kambaiti, Burma, May 20, 1944, USNM 65133.

REMARKS: This species differs from *I. provorsus* Distant by its broadly obovate form, constricted lateral carinae, and the sharply defined discoidal area.

Genus *Bako* Schouteden

Bako Schouteden, Rev. Zool. Africaine, vol. 11, No. 1, p. 91, 1923.

Bako dieides, new species

FIGURE 22

DESCRIPTION: Small rectangular in outline, whitish testaceous, usually without small brownish or fuscous marks on veinlets; areolae large, hyaline, iridescent; body beneath blackish, laminae of buccal and sternal sulci and of hypocostal ridge whitish, with areolae poorly and not clearly defined. Legs brownish testaceous, tips of tarsi dark fuscous. Antennae brownish testaceous, apical half of last segment blackish. Length 3.00 mm., width 0.90 mm.

Head very short, concealed by pronotal hood, with frontal spines greatly reduced or absent, the hind pair long, slender, appressed; bucculae short, parallel, scarcely reaching anteriorly to apex of head, open in front. Antennae long, quite slender, first two segments not reaching to apex of hood, fourth segment slightly swollen on apical half; segmental measurements: I, 18; II, 8; III, 78; IV, 30. Labium brown, with black tip extending to base of mesosternum; sternal laminae of sulcus wide, parallel on metasternum, more widely separated and cordate on metasternum, closed behind. Legs slender, smooth. Scent gland ostiole and ostiolar sulcus indistinct.

Pronotum tricarinate, largely concealed by hood, tumid elevation of hind process, and the deflexed lateral carinae; hood large, with superior surface strongly convex, extending anteriorly beyond apex of head and posteriorly almost to middle of pronotal disc, strongly narrowed anteriorly beyond distal one-third, basal length much greater than height of posterior part (75:50); median carina strongly inflated on posterior process, with one large cell between inflated hind part and hood (fig. 22); lateral carinae long, wide, usually deflexed outwardly, with outer third suberect, not divided into cells (apparently composed of one large cell); paranota wide, slightly raised, composed of four large cells.

Elytra with discoidal and adjacent part of subcostal areas sharply jointly raised so as to form together a long, tectiform elevation, which extends backward beyond middle of elytra; costal area wide, composed of one row of very large cells, usually with an extra large cell in widest part. Brachypterous form with elytron shortened and entirely uniseriate; metathoracic wings absent.

Types: Holotype (male), allotype (female), and 4 paratypes, Grahamstown, South Africa, December 1953, Dr. E. M. Callan, USNM 65134.

Remarks: The holotype of *B. dieides* is illustrated in figure 22. The species is broader than its African congeners and is probably most closely allied to *B. editus* Drake of the African mainland and Madagascar. The latter is prominently marked with brown or fuscous and has shorter antennae and smaller inflated lacy structures of the pronotum.

Genus *Cottothucha* Drake and Poor

Cottothucha Drake and Poor, Pan-Pacific Ent., vol. 17, No. 4, p. 162, 1941.

Cottothucha oceanae Drake and Poor

FIGURE 23

Cottothucha oceanae Drake and Poor, Pan-Pacific Ent., vol. 17, p. 163, 1946.

Originally described from Amboina, an island in the Moluccas, Malay Archipelago. A specimen from the Philippine Islands (Luzon) is illustrated in figure 23.

Genus *Caloloma* Drake and Bruner

Caloloma Drake and Bruner, Mem. Soc. Cubana Hist. Nat. "Filipe Poey," vol. 6, Nos. 3-4, p. 152, 1924.

***Caloloma uhleri* Drake and Bruner**

FIGURE 24

Caloloma uhleri Drake and Bruner, Mem. Soc. Cubana Hist. Nat. "Felipi Poey," vol. 6, p. 153, 1924.—Drake, Bull. Southern California Acad. Sci., vol. 44, p. 98, 1945.—Drake and Ruhoff, Proc. U.S. Nat. Mus., vol. 112, p. 42, 1960.

As has been hitherto stated in the literature, it is quite evident that *C. uhleri* is an indigene of Australia (Queensland and New South Wales) and that the record from Antigua of the Lesser Antilles represents an accidental introduction by man. There is no evidence at present to indicate that this lacebug has been able to establish itself in the West Indies. A specimen from Queensland is illustrated in figure 24.